

**Winnebago Landfill
Winnebago County, Illinois**

US EPA RECORDS CENTER REGION 5



**Permit Number 1991-138-LF
Illinois EPA Site No. 2018080001**

**Application for Significant Modification
For Permit Renewal
Groundwater Impact Assessment Review**

Volume 2 of 2

November 2012



Submitted to:
**Illinois Environmental Protection Agency
Bureau of Land
Springfield, Illinois**

Prepared for:
**Winnebago Reclamation Service, Inc.
8403 Lindenwood Road
Rockford, IL 61109**



Prepared by:

**ANDREWS
ENGINEERING, INC.**

**3300 Ginger Creek Drive
Springfield, Illinois 62711
Tel: (217) 787-2334; Fax: (217) 787-9495**



November 14, 2012

Stephen F. Nightingale
Manager, Permit Section
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Re: 2018080001 – Winnebago County
Winnebago Landfill – Northern and Southern Expansion Units
Renewal of Permit No. 1991-138-LFM

Dear Mr. Nightingale:

On behalf of Winnebago Landfill, submitted herein are an original and three copies of an application for renewal of Permit No. 1991-138-LFM pursuant to 35 Illinois Administrative Code Sections 813.301 through 813.305. The application is comprised of two volumes; Volume 1 is authored by Shaw and Volume 2 by Andrews Engineering, Inc. The required application forms (Certification of Authenticity and LPC-PA1) are provided in Appendix A of Volume 1.

Please contact Tom Hilbert at (815) 963-7516 if you have any questions or require additional information.

Sincerely,

Brad J. Hunsberger

Brad J. Hunsberger, LPG
Director of Hydrogeological Services

BJH:tns:sjb

Enclosure

cc: Tom Hilbert – Rock River Environmental Services
Evan Buskohl – Rock River Environmental Services
Bernie Shore – US EPA Region 5

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Applications

3300 Ginger Creek Drive, Springfield, Illinois 62711 ♦ 217.787.2334 fax 217.787.9495 www.andrews-eng.com

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1. INTRODUCTION

Winnebago Landfill is located approximately five miles south of Rockford, Illinois. The town of New Milford is approximately one and one-quarter miles north of the site, with the Kishwaukee River running east-west through the town approximately the same distance from the site. Lindenwood Road runs along the east boundary of the site while a 100-year floodplain of Killbuck Creek forms the western border of the Northern and Southern Units.

Land use in the region is predominately industrial and agricultural, with some residential and recreational areas. Quarries and gravel pits are located northeast and east of the site. Due east of the site is the former Acme Solvents facility (see Figure 11). The Acme Solvents facility was in operation from 1960 to 1973 and was used for the disposal of solvent still-bottoms, non-recoverable solvents, paints and oils in unlined pits as well as the burial of drums. Approximately two-thirds of a mile to the northwest of the Northern Unit is the Meridian Forest Preserve. Approximately one mile to the southwest is Orchard Hills landfill facility.

The Winnebago Landfill facility currently consists of four separate solid waste units. The Northern and Southern Units, which ceased accepting waste on September 8, 2000 and March 31, 2011, respectively, are authorized under Illinois EPA Permit No. 1991-138-LF. The North Expansion Unit, which is located between the existing Northern Unit and Baxter Road, began operation under Illinois Permit No. 2006-221-LF on May 16, 2008 and is currently active. The West Expansion Unit was permitted via Illinois Permit No. 2010-133-LF but has not been developed at this time. A site map delineating each of the units is provided in Figure 2.

Until the initial application for significant modification was permitted in 1993, the facility contained one waste disposal unit, identified as Pagel's Pit (Northern Unit). In 1990, a local siting application for the expansion of the landfill to the south was approved by the Winnebago County Board. A subsequent permit application was submitted to the Illinois EPA on April 5, 1991 for approval of the expansion of the facility. That submittal was identified as the Application for Significant Modification but was specific to the Southern Unit. This application was completed in accordance with the rules defined in 35 Illinois Administrative Code (Ill. Adm. Code) Part 811. No operational or design changes were proposed for the Northern Unit as part of the 1991 permit application. The facility operating permit 1991-138-LF was renewed with the issuance of Modification No. 6 on June 18, 1998 (Application Log No. 1998-001) and Modification No. 24 on March 26, 2004 (Application Log No. 2002-373). Permit Modification No. 25 (Log No. 2003-239) approved the inclusion of the area between Southern and Northern Units. The design of the expansion maintained separation between the Northern Unit waste and the Southern Unit waste via the Northern Unit final cover system—a synthetic liner and geocomposite drainage blanket that routes liquids in the expansion area to the Southern Unit's leachate collection system. The facility operating permit 1991-138-LF was again renewed with the issuance of Modification No. 43 on April 13, 2010 (Application Log No. 2008-018).

Due to groundwater contamination adjacent to the Northern Unit (at the ACME Solvents site), the U.S. EPA signed a Record of Decision (ROD) in June 1991 requiring Remedial Design and Remedial Action plans. The ROD was incorporated in a Consent Decree dated February 6, 1993. The facility currently exists with a Groundwater Management Zone (GMZ) and approved remediation program via natural attenuation and source reduction. A permit application was submitted July 10, 1995 (Illinois EPA Log No. 1995-250) to facilitate compliance of the Northern Unit with the applicable requirements of 35 Ill. Adm. Code Part 811 and 812, pursuant to

Sections 814.104, 814.301, and 814.302. Additional information pertaining to the Northern Unit is provided in Section 6.

2. PERMIT RENEWAL REQUIREMENTS

35 Ill. Adm. Code 813 Subpart C provides the procedure for the submission of permit renewal applications. Specifically, Section 813.303 lists the information necessary for renewal, which for clarity, has been provided below.

Section 813.303 Information Required for a Permit Renewal

- a) *The operator shall submit only that information required by 35 Ill. Adm. Code 812 that has changed since the last permit review by the Agency.*
- b) *The operator shall update the groundwater impact assessment in accordance with Section 813.304; and*
- c) *The operator shall provide a new cost estimate for closure and post-closure care pursuant to 35 Ill. Adm. Code 811 Subpart F based upon the operations expected to occur in the next permit term.*

Volume I of this application addresses items pertaining to the engineering and operational aspects of the facility. Therefore, subsections 813.303(a) and 813.303(c) above are addressed in Volume I. Volume II specifically addresses issues pertaining to hydrogeologic aspects of the application. Since the Northern and Southern Units are separate units and contain separate engineering designs and groundwater monitoring programs, compliance with 35 Ill. Adm. Code 813.303(b) and 813.304 is discussed separately for each unit in Sections 3 and 6 below.

3. EVALUATION OF THE GROUNDWATER IMPACT ASSESMENT – SOUTHERN UNIT

3.1 General Information

A review of the permitted Groundwater Impact Assessment (GIA), submitted as part of an Application for Significant Modification (Illinois EPA Permit No. 1991-138), has been completed in accordance with 35 Ill. Adm. Code 813.304(a)(1-5). The original GIA approved in the initial significant modification permit (1991-138-LFM) and subsequent review as part of Illinois EPA Log No. 1998-433 were evaluated as part of the last two permit renewal applications (Illinois EPA Log Nos. 2002-373 and 2008-018). The parameters utilized in that original GIA were deemed appropriate and the contaminant transport model successful based on the review criteria of 35 Ill. Adm. Code 813.304(a)(1-5). However, since the 2008 renewal, a change in the design and operation of the liner and leachate collection system has been permitted as discussed in Section 3.3 below. The following sections provide a discussion of the components of the GIA and any applicable change to the landfill operation and liner design.

3.2 New or Changed Operating Conditions

A change or addition to the operating conditions for the facility has been approved since the last permit renewal application (Log No. 2008-018). The approved modifications that occurred since the last renewal are listed in Table 1. As shown, none of the changes in the facility or its

operation will result in an increase in the probability of exceeding a groundwater quality standard at or beyond the zone of attenuation.

3.3 Changes in the Design and Operation of the Liner and Leachate Collection System

There have been no changes in the design and operation of the liner or leachate collection system since the last permit renewal application (Log No. 2008-081, See Table 1).

3.4 Changes Due to More Accurate Geological Data

Geological information has been collected throughout the operating life of the facility, including boring programs and the installation of monitor wells, piezometers, and gas probes as part of on-going operations and facility expansions. Comprehensive geologic information has been presented in numerous applications submitted to the Illinois EPA but are not herein named. Since the last permit renewal application, no additional hydrogeologic information has been obtained that would result in an increased probability of constituents exceeding a groundwater quality standard beyond the zone of attenuation. The information utilized in the GIAs remains current and accurate. This applies to the GIA conducted as part of the Southern Unit Expansion defined in the following sections.

3.5 Changes Due to Modified Groundwater Conditions Due to Offsite Activity

3.5.1 Groundwater Flow Conditions

The historical direction of movement within the uppermost aquifer is westward in the bedrock upland east of the site and to the west-northwest in the unconsolidated sediments. Potentiometric surface maps provided in Appendix A indicate groundwater movement is generally west-northwest south of the Northern Unit. Dewatering activities implemented as part of cell development within the North Expansion Unit have caused the groundwater movement to temporarily deviate slightly in a northward direction near the Northern Unit. Construction dewatering will be completed within two years. Therefore, the original model still remains applicable for long-term evaluation of the closed northern unit.

As shown in Figure 2, Kilbuck Creek is located west of the Southern, Northern, and North Expansion Units. Shallow groundwater may discharge to Kilbuck Creek while groundwater in the lower part of the unconsolidated sediments and deeper bedrock moves beneath Kilbuck Creek. Kilbuck creek is both a gaining and losing stream dependent upon hydrogeologic and atmospheric conditions. During drier periods where the water table drops below the bottom of the creek bed, surface waters feed the groundwater system. During wetter periods where the water table is high (above the bottom of the creek bed) the groundwater system will recharge the stream and wetlands. This fluctuation allows mixing of surface water (and, therefore, surface water constituents) with groundwater (and any groundwater constituents) often on a seasonal basis. In addition, dependent upon the creek stage, the surface waters of both the creek and the wetland mitigation area may be contiguous.

The aquifer system beneath the facility, which includes both the saturated sand and gravel and the upper weathered/fractured part of the dolomite, extends to an approximate depth of 665 feet mean sea level. East of the landfill and beneath the eastern quarter of the Northern Unit, the water table occurs within the dolomite bedrock. Beneath the western three-fourths of the site and within the Kilbuck Creek Valley, the water table occurs within the sand and gravel deposits. Previous hydrogeologic investigations and evaluations have shown that vertical gradients do

exist within the uppermost aquifer but are typically slight at any individual location. Therefore, groundwater elevations from the bedrock wells and wells screened in the unconsolidated materials (sand and gravel) were used to create one potentiometric surface for each quarterly sampling period. As expected, the hydraulic gradients are greater at the east end of the facility where the bedrock is higher and flat near Kilbuck Creek.

Potentiometric surface maps (compiled using data obtained from the permitted monitor wells in both the Northern and Southern Units) are provided in Appendix A. These maps present data obtained since the previous renewal application (first quarter 2008 to fourth quarter 2012) to demonstrate that the flow direction and hydraulic gradients have remained relatively consistent for the Southern Unit. Therefore, assumptions used to complete the GIA remain representative of current hydrogeologic conditions. Modification to the GIA is not warranted. These conclusions are also applicable to the Southern Unit Expansion GIA.

3.5.2 Background Groundwater Quality

The initial AGQs for the Southern Unit were determined from data obtained from the permitted upgradient/background wells. However, revisions to several background values have included data from wells R05S, R29S, and G29D as part of the statistical derivation. Although permitted as zone of attenuation wells, these wells are actually hydraulically upgradient to the Southern Unit and provide additional information on the background groundwater quality. Monitoring wells G13S and G13D are contained in the monitoring well networks for both the Northern and Southern Units. The groundwater quality for these two wells along with R05S (Southern Unit) are not evaluated with respect to the permitted AGQs but are reviewed based on trend analyses in accordance with Condition VIII.24 of Permit No. 1991-138-LF (Modification No. 58).

Table 2A list parameters that exhibited a confirmed increase during the review period (first quarter 2008 through third quarter 2012) based on comparisons to the AGQs values. The increases reported for upgradient wells (R05S, G13S, G13D, and G22D) appear to be representative of background conditions and unaffected by waste disposal operations, based on the current and historical potentiometric surface information. The background groundwater quality has not changed sufficiently to invalidate any of the assumptions or results from the GIA submitted as part of the initial application for significant modification. These conclusions are also applicable to the Southern Unit Expansion GIA.

3.6 Southern Unit Changes Due to Leachate Characteristics

The leachate characteristics for the last five years of operation have been reviewed based on initial predicted model concentrations to ensure the GIA continues to be appropriate. Model prediction factors were not calculated for the initial GIA. Instead, the actual leachate concentrations were used as the source concentrations; the subsequent model results were predicted groundwater concentrations. The predicted groundwater concentrations were then compared directly to the proposed AGQs for determination of a passing model. Rerunning the model scenarios with the current maximum leachate concentrations (as done in the initial GIA) is not necessary. As part of the 2002 Permit Renewal Application (Log No. 2002-373), model prediction factors were calculated for each surrogate and individually modeled parameter by dividing the "computer simulated concentration" by the initial source concentration used for that surrogate group or parameter. This resulted in a model prediction factor that is the proportion of the simulated parameter concentration (the derived modeling concentration) to the initial source concentration (initial input concentration). Model prediction factors were calculated for each

detected leachate parameter except as identified below. The model prediction factor was then multiplied by the current maximum leachate concentration and compared to the current permitted AGQSs for the parameters within the surrogate group or individual parameter. If the product was less than the permitted AGQS, compliance with 35 Ill. Adm. Code 811.317(b) had been demonstrated.

The model prediction factors determined during the 2002 renewal have been multiplied by the maximum leachate concentration recorded during the current review period (first quarter 2008 through third quarter 2012) and compared to the current AGQS. If the product is less than the AGQS, compliance with 35 Ill. Adm. Code 811.317(b) has been demonstrated.

Table 3 presents the leachate data for the Southern Unit for the review period. Table 4 lists the maximum leachate concentration recorded during the review period. Table 4 also lists the currently permitted AGQSs, the model prediction factors and the predicted model concentrations. As shown, the predicted model concentrations for 1-propanol, 2-butanone, 4-methyl-2-pentanone, and acetone exceeded the permitted AGQS value. The maximum leachate concentration for all four subject parameters was recorded in well L302 during the second quarter 2008 sampling event. The second quarter 2008 results observed at L302 are significantly higher than previous or subsequent concentrations recorded for these parameters (see Table 3). In addition, detections of 2-butanone (12 ug/L) and acetone (83 ug/L) in the second quarter 2008 equipment blank indicate that the elevated concentrations observed at L302 are associated with laboratory and/or sampling artifact (Appendix B). Given the lack of assurance in the accuracy of the results, it is appropriate to remove the second quarter 2008 leachate results for 1-propanol, 2-butanone, 4-methyl-2-pentanone, and acetone from the maximum leachate concentration calculation. The next highest concentrations for all four parameters (1-propanol, 2-butanone, 4-methyl-2-pentanone, and acetone) were recorded in well L302 during second quarter 2012. The second quarter 2012 concentrations for all four parameters are below the AGQS. Therefore, the assumptions and data utilized in construction of the GIA for the Southern Unit are still appropriate. No modifications to the GIA are necessary.

3.7 Southern Unit Evaluation Conclusions

Based on the above discussion, it is concluded that the conditions applicable to the original GIAs have not changed in such a way as to result in violations of groundwater standards pursuant to 35 Ill. Adm. Code 811.320 at or beyond the zone of attenuation. A few monitoring wells show concentrations of parameters in groundwater that exceed the groundwater standards. However, these observed increases are generally upgradient, related to naturally occurring conditions and/or sources other than the landfill. A detailed discussion of the groundwater quality for the Southern Unit is provided in Section 4. Based on the information presented above and in accordance with 35 Ill. Adm. Code 813.304(b), a new GIA is not required for the Southern Unit or the Southern Expansion Unit.

4. EXISTING GROUNDWATER QUALITY – SOUTHERN UNIT

Table 2B lists all wells and parameters exhibiting a confirmed increase (as defined by Permit Condition VIII.13) during the review period (first quarter 2008 through fourth quarter 2012). In accordance with Permit Condition VIII.13, an exceedence is defined as any concentration that exceeds the respective AGQS/MAPC value and/or any concentration of an organic parameter that exceeds the respective preceding concentration.

As shown, the vast majority of the confirmed increases were recorded for wells that are hydraulically upgradient to the waste unit (R05S, G13S, G13D, R11S, G11D, and G22D).

As mentioned in Section 3.5.2 above, monitoring wells G13S and G13D are contained in the monitoring well networks for both the Northern and Southern Units. The groundwater quality for these two wells along with R05S are not evaluated with respect to the permitted AGQS values but are reviewed annually based on trend analyses in accordance with Condition VIII.24 of Permit No. 1991-138-LF (Modification No. 58). The most recent evaluation of trends for wells R05S, G13D, and G13S was submitted May 1, 2012 as part of the annual report required by Permit Condition XI.2 (Modification No. 53).

In accordance with Condition VIII.15 of the permit, alternate source demonstrations were submitted for the remaining confirmed exceedences listed on Table 2B. The application in which each exceedence was addressed is provided on the table for reference. With the exception of Log No. 2012-459, all of the referenced applications have been approved with the issuance of Permit Modification Nos. 46 (Log No. 2010-152) and 51 (Log Nos. 2011-004 and 2011-118). Application Log No. 2012-459 was submitted October 1, 2012 as an alternate source demonstration for the second quarter 2012 confirmed increase of tetrachloroethene at R11S. This application is currently pending Illinois EPA review.

Based on a review of parameter concentrations, groundwater flow conditions in the vicinity of the unit and that the Southern Unit has been recently constructed with a geo-composite liner system, any observed increases appear to be attributable to background conditions unassociated with the Southern Unit. The groundwater quality evaluation as presented herein is also applicable to the Southern Unit Expansion.

5. EVALUATION OF THE GROUNDWATER IMPACT ASSESSMENT – SOUTHERN UNIT EXPANSION

As stated previously, the Southern Unit Expansion consists of an area located between the Northern and Southern Units, including an area overlapping the south side slope of the Northern Unit. Calculations were completed as part of the expansion application (Log No. 2003-239) that accounted for leachate collection and removal, which incorporated the total waste footprint extending up the Northern Unit side slope. Along the side slope of the Northern Unit, the new wastes are separated from the existing wastes by the existing Northern Unit final cover plus a 60-mil HDPE synthetic liner overlain by a geocomposite drainage blanket. As a result, the GIA for the Northern Unit required no modification. The expansion application included a GIA that evaluated the potential impact of the area left between the two units that had not been evaluated with respect to the requirements of 35 Ill. Adm. Code 811.317. The analytical model utilized was a POLLUTE simulation of solute transport through the liners and unsaturated sediments followed by dilution in the underlying saturated sediments. The basic conclusions of the GIA were:

- The simulated prediction factor at the end of extended compliance of 2.37×10^{-7} .
- A first-order error analysis indicated a standard deviation of the simulated prediction factor of 3.81×10^{-5} . The associated cumulative probabilities showed a 60.1 percent likelihood that the prediction factor was less than 10^{-5} and 99.6 percent that it was less than 10^{-4} .

- For all compounds on the annual G1 list, the simulated groundwater impacts were less than the AGQS.

The modeled prediction factor used was highly conservative; it assumed a maximum leachate solute concentration and maximum advective flux through the liner. It did not account for the time lag associated with horizontal flow beneath the landfill, transport across the zone of attenuation and sorption or biochemical decay. The Illinois EPA found the additional modeling to be appropriate and as a result approved the expansion and additional GIA on March 26, 2004 via Permit Modification No. 24.

Table 5 lists the maximum leachate concentrations for the Southern Unit for all data during the review period. That table also lists the permitted AGQS, the model prediction factor and the predicted model concentrations. As shown, all of the predicted model concentrations are below the respective AGQS values. Therefore, leachate characteristics have not changed such that model results from the initial GIA would result in the probability of an exceedence of the AGQS beyond the zone of attenuation. No modifications to the GIA are necessary.

6. EVALUATION OF THE GROUNDWATER IMPACT ASSESSMENT – NORTHERN UNIT

6.1 General Information

Subsequent to siting approval in 1990 from the Winnebago County Board, Winnebago Landfill submitted the initial significant modification application pursuant to the newly approved regulations (Title 35 Subtitle G) to the Illinois EPA on April 5, 1991. The application incorporated the existing Northern Unit with a proposed expansion that would become the Southern Unit. The design and operational modifications proposed in that submittal were specific only to the Southern Unit; no changes were proposed for the Northern Unit.

The Northern Unit was added to the National Priorities List in June 1986 due to groundwater contamination associated with the upgradient Acme Solvents Superfund site. Based on perceived groundwater contamination adjacent to the Northern Unit (at the ACME Solvents site), the U.S. EPA signed a Record of Decision (ROD) in June 1991 requiring Remedial Design and Remedial Action plans. The ROD was incorporated in a Consent Decree entered in the U.S. District Court for the Northern District of Illinois, Western Division, Case No. 92-C-20346 in February 1993. A ROD amendment was submitted to the U.S. EPA in 1997 for a new or revised Consent Decree to reflect a new Statement of Work (SOW) due to a change in the remedy. The subject ROD was issued in 1999.

The facility currently exists with a GMZ and approved remediation program via source reduction and natural attenuation. The subject permit application was submitted July 10, 1995 (Illinois EPA Log No. 1995-250) to facilitate compliance of the Northern Unit with the applicable requirements of 35 Ill. Adm. Code Part 811 and 812, pursuant to Sections 814.104, 814.301, and 814.302. The GMZ and Corrective Actions status is re-evaluated every five years, in accordance with the review schedule set by the U.S. EPA, with the most recent evaluation submitted May 1, 2012 (Log No. 2012-171).

An application for Significant Modification was submitted to the Illinois EPA in July 1995 (Log No. 1995-250) to facilitate compliance of the Northern Unit with the applicable requirements of 35 Ill. Adm. Code Part 811 and 812, pursuant to Sections 814.104, 814.301,

and 814.302. The referenced application included a GIA for the Northern Unit. At the time of the above referenced application, the Northern Unit was conducting remedial action or preparing to implement remedial designs. The groundwater quality at that time consisted of a few parameters in exceedence of their respective background concentrations. Therefore, the GIA was directed toward assessing the potential impacts of the facility after completion of the remedial activities and was used to evaluate the effectiveness of the remediation design. The remedial activities included completion of redesigned final cover system and implementation of a comprehensive leachate/gas extraction system, both designed to control and reduce the contaminant source. As source control measures reduce concentrations near the waste unit boundary, intrinsic remediation was selected to reduce remaining elevated parameter concentrations within the GMZ.

The original GIA for the Northern Unit was evaluated as part of the last permit renewal application (Illinois EPA Log No. 2008-018) submitted in January 2008. The parameters utilized in that original GIA were deemed appropriate and the contaminant transport model successful based on the review criteria of 35 Ill. Adm. Code 813.304(a)(1-5). This application will evaluate any changes in the facility or its operation since the 2008 renewal that would result in an increased probability of a constituent exceeding a groundwater standard beyond the zone of attenuation.

6.2 New or Changed Operating Conditions

Since the Northern Unit has been certified closed via Affidavit for Certification of Closure in accordance with the permitted design specifications, no new or changed operating conditions have occurred that would adversely affect the results of the initial GIA and therefore no revision to the GIA is necessary.

6.3 Changes in the Design and Operation of the Liner and Leachate Collection System

The contaminant transport model contained in the original GIA considered the design of the existing liner system along with that of the leachate extraction system subsequently implemented. The Northern Unit was certified closed in accordance with the permitted design specifications. All approved permit modifications since the 2008 renewal are listed in Table 1. None of the approved modifications affected the liner or leachate collection system for the Northern Unit. Therefore, no new changes to the design or operation of the liner or leachate collection systems have occurred since the GIA was completed.

6.4 Changes Due to More Accurate Geological Data

The hydrogeologic conditions for both the Northern and Southern Units are similar. Geologic and hydrogeologic investigations conducted for either unit helped define the facility hydrogeologic characteristics. No additional geologic information has been obtained contrary to that presented in the GIA as to invalidate the initial model or results. The information utilized in the GIA remains current and accurate.

6.5 Changes Due to Modified Groundwater Conditions Due to Offsite Activity

6.5.1 Groundwater Flow Conditions

The groundwater flow conditions have been evaluated using data from wells located adjacent to both waste units. A detailed discussion of groundwater movement within the facility premises is

provided in Section 3.5.1 above. The discussion is not reproduced in this Section. As stated in the referenced section, construction dewatering activities associated with the North Expansion Unit have caused the groundwater movement to temporarily deviate slightly in a northward direction near the Northern Unit. Construction dewatering will be completed within two years. Therefore, the original model still remains applicable for long-term evaluation of the closed northern unit. Modification to the GIA is not warranted.

6.5.2 Background Groundwater Quality

The initial background concentrations for the Northern Unit were determined from data pooled from four wells located east of Lindenwood Road near the Acme Solvent property (B-8, STI-2S, STI-2I, and STI-2D) from 1990 through 1992. The Applicable Groundwater Quality Standards (AGQSSs) were proposed in the initial significant modification application and subsequent addendums. Addendum 3 to the initial significant modification, dated February 10, 1993, provided the first full listing of routine AGQS values derived from wells G09M, G09D, G13S, and G13D. Since the time the background concentrations were obtained, remediation at the Acme Solvent facility has been reduced to groundwater extraction from a cut-off trench. In addition, a quarry and sand and gravel pit began operation east of Acme Solvent upgradient of the landfill facility. Both facilities are located upgradient to the landfill. The approximate location of the quarry is shown in Figure 1. These activities have likely affected the current background conditions. To account for changes in the background groundwater quality since 1993, revised AGQS values for 60 parameters were submitted and subsequently approved on March 26, 2004 with the issuance of Modification 24 to the current permit.

Table 6A list parameters (non-GMZ) that exhibited a confirmed increase during the review period (first quarter 2008 through third quarter 2012) based on comparisons to the AGQS/MAPC values. The increases reported for the upgradient wells (G09D, G09M, G13D, G13S, and G20D) appear to be representative of background conditions and unaffected by waste disposal operations, based on the current and historical potentiometric surface information. The background groundwater quality has not changed sufficiently to invalidate any of the assumptions or results from the GIA submitted as part of the initial application for the Northern Unit.

6.6 Changes Due to Leachate Characteristics

Leachate concentrations utilized in the GIA for the Northern Unit were obtained from the analyses of samples collected from four different points. The source concentrations utilized for evaluation of the contaminant transport model were derived by the mean concentration of the four sets of analyses plus two standard deviations. The Northern Unit ceased accepting waste in September 2000. Therefore, during the review period (2008 through 2012), no new wastes have been placed in the Northern Unit. Leachate quality is expected to vary but only due to degradation of the wastes.

To compare the leachate characteristics from the review period to those used in the initial GIA, data from four leachate monitoring points (L313, L315, L317, and L318) were compiled. The leachate analytical results are presented in Table 7. Table 8 lists the mean and standard deviation calculations for leachate concentrations during the current review period, along with the leachate concentrations used for the initial GIA. The current leachate concentrations are similar to those used for the source concentrations, with some higher than the 1995 values.

Table 9 provides a list of the GMZ parameters. These parameters, along with the parameters listed on Table 6B (confirmed exceedences) and parameters that were not modeled as part of the initial GIA were evaluated with respect to the contaminant transport model (CTM) contained in the initial GIA report (GeoTrans, 1995c). The maximum leachate concentrations were multiplied by the Model Prediction Factor (MPF) identified in Section 3.2 of the 1995 Report, resulting in a predicted model concentrations at the edge of the zone of attenuation. The predicted model concentrations were compared to the current AGQS values to determine if the CTM still indicates compliance with the groundwater quality standards. As shown by Table 10, the predicted model concentrations are below the AGQS values for each listed parameter. Therefore, the CTM results indicate the groundwater quality should meet the permitted standards.

Prior to the completion of the GIA for the Northern Unit, groundwater impacts had been identified attributable to the waste unit. Detailed investigations were completed and findings were submitted to both the Illinois and the US EPAs. As stated in Section 1, the U.S. EPA signed a ROD in June 1991 requiring a Remedial Design/Remedial Action (RD/RA) plan. The ROD was incorporated in a Consent Decree. The RD/RA Plan was implemented and included comprehensive leachate and gas extraction and final cover systems. The final cover system was completed in 2002, finalizing the approved remedial measures. It was stated in the initial GIA that "existing impacted groundwater is estimated to be cleaned up in five to ten years (GeoTrans, 1995c)." This inferred five to ten years after implementation of the remediation systems.

The most current reevaluation of the GMZ was conducted during 2012. Application Log No. 2012-171 was submitted to the Illinois EPA for review on May 1, 2012 and approved on October 2, 2012 as Permit Modification No. 57. The application concluded that although a few GMZ parameters are still detected at concentrations above backgrounds, significant improvements to groundwater quality are evident as demonstrated by the decreases in individual parameter concentrations and GMZ extents. In addition, the organic constituents that prompted the remedial actions are typically not detected in groundwater downgradient of the facility. These improvements in groundwater quality demonstrate that the remedial measures are effective and appear to be functioning to meet the estimated timeline given in the initial GIA.

7. EXISTING GROUNDWATER QUALITY – NORTHERN UNIT

This section summarizes the groundwater quality for the Northern Unit of Winnebago Landfill. As shown by Figure 2, 3, and 4, the monitoring network for the unit contains 35 groundwater monitoring points. Of the 35 wells, five are designated as background groundwater quality wells (upgradient), one is a compliance boundary well at the edge of the zone of attenuation and the remaining wells monitor within the zone of attenuation downgradient and sidegradient of the landfill. The GMZ encompasses all 35 Northern Unit monitoring points and three surface water sampling points. The GMZ parameters are listed in Table 8. Groundwater quality for the Northern Unit and the GMZ are discussed separately in the sections below.

7.1 Groundwater Management Zone

The results of historical groundwater sampling at Winnebago Landfill indicated that impacted groundwater was present beneath and downgradient to the Northern Unit of the facility. Elevated levels of inorganic compounds and organic solvents were detected, which prompted the site's 1995 applications for a GMZ. Although organic compounds were previously detected

within the GMZ and prompted the NPL listing and corrective actions, the actual boundaries were determined by inorganic concentrations. The organic compounds were attributed to the ACME Solvent facility. The GMZ delineated the three-dimensional extent of groundwater that exhibits concentrations in excess of the AGQS and was defined by the furthest extent of leachate constituents above those standards.

In the 1995 applications, chloride and ammonia were chosen to demarcate the GMZ boundary because the extent of the elevated concentrations of these compounds incorporated the largest area. Two zones (Upper Zone and Lower Zone) were developed in order to address differences in groundwater quality seen between the upper and lower parts of the sand and gravel aquifer. The limit of the GMZ was determined not to extend to the dolomite bedrock since no contaminants were detected in bedrock wells downgradient of the waste unit. Although only slight differences in hydraulic head existed between the bedrock and the Upper Zone, groundwater quality indicates appreciable differences in concentrations. These variations are likely due to the slight upward flow from the bedrock zone to the lower sand and gravel in addition to the different flow regimes between the Upper and Lower Zones. As noted in section 3.5.1, shallow groundwater normally discharges to Killbuck Creek while deeper groundwater flows beneath the creek.

The remedial measures and remedial performance monitoring program implemented pursuant to U.S. EPA guidelines were also the chosen remedial actions for the GMZ and were incorporated into the 1995 Permit Renewal and GMZ applications (Illinois EPA Application Log Nos. 1995-250 and 1996-058, respectively). The remedial measures, consisting of source reduction and natural attenuation, were implemented pursuant to a 1997 ROD Amendment for a new or revised Consent Decree, which reflected a new SOW due to a change in the remedy (issued in 1999). Source reduction was accomplished via three corrective measures: construction of a final cover; installation of additional leachate extraction wells; and installation of a gas extraction system. The concentrations of chlorinated compounds attributable to the Acme Solvent site decreased significantly during the 1990s due to the installation and operation of various remedial systems upgradient of the landfill at the Acme Solvent site. As such, the remedies designated for these compounds for the Northern Unit were deemed unnecessary.

The final cover for the Northern Unit was constructed in two phases. The western portion was completed in 1998 and the eastern portion in July 2001. The final cover inhibits infiltration of precipitation, thereby significantly reducing leachate production. A collection system, which includes 35 vertical dual gas/leachate extraction wells, was also installed with the recovered gas being directed to a flare system and leachate to storage tanks. Subsequent to completion of the final cover placement, the gas extraction system was modified in late 2002 to include a larger capacity system (2,500 cfm system vs. the initial 1,000 cfm system). This system enhancement considerably increased the efficiency of the gas extraction system.

The GMZ boundaries, as depicted in 1995, were based on one set of data (March 1995) obtained while the Northern Unit was active (four years prior to initial closure activities). A re-evaluation of the GMZ was conducted in 2004 pursuant to Condition VIII.22 of Permit No. 1991-138-LF, Modification No. 24. The evaluation was submitted July 15, 2004 as Illinois EPA Application Log No. 2004-257 (approved by Permit Modification No. 28). The results of the evaluation indicated that the large majority of GMZ parameter concentrations substantially decreased, many to levels below the permitted AGQs. Revised GMZ boundaries were similar to those depicted in 1995, although the 2004 perimeter was extended to encapsulate a small number of wells that were not included within the initial GMZ. The revision included extending the lower boundary of the GMZ in the vicinity of upgradient well G09D (and former well G14D)

to include the upper portion of the dolomite bedrock. Dissolved ammonia and dissolved boron were chosen to demarcate the GMZ boundary because the extent of the elevated concentrations of these compounds incorporated the largest area. The use of dissolved ammonia and dissolved boron superseded the use of dissolved chloride as an indicator of leachate-derived compounds due to the other potential chloride sources (road salt, water softeners, etc.) within the vicinity of the facility.

The changes in the boundaries/extent from 1995 to 2004 were not an indication of the effectiveness of the remediation program. When comparing the differences between the 1995 and 2004 GMZ boundaries, the operational status of the Northern Unit and the amount of available data were considered. In 1995, the Northern Unit was fully operational with no closed areas and the GMZ boundaries were determined from one sampling event. Six additional years of waste disposal occurred prior to the completion of the closure activities. Final cover placement began in 1999 and was completed in July 2001. Additional closure activities were completed in 2002 with the revision of the leachate/gas extraction system. The Groundwater Impact Assessment (GIA [1995]), which evaluated the natural attenuation/degradation remediation method, assumed steady-state conditions after completion of the closure activities and estimated five to ten years for cleanup to achieve background conditions.

A re-evaluation of the GMZ was conducted in 2007 pursuant to Condition VIII.22. The re-evaluation was submitted May 1, 2007 as Illinois EPA Application Log No. 2007-181 (approved by Permit Modification No. 37). The results of the re-evaluation indicated that although a few inorganic parameters were still detected at concentrations above backgrounds, significant improvements to groundwater quality were evident as demonstrated by the decreases in individual parameter concentrations and GMZ extents. In addition, the organic constituents that prompted the remedial actions were typically not detected in groundwater downgradient of the facility during the review period. Revised GMZ boundaries were similar to those depicted in the 2004 evaluation. Although decreases in the GMZ extent and parameter concentrations were demonstrated in Illinois EPA Application Log No. 2007-181, the Illinois EPA requested further characterization of the western boundary of the GMZ.

In accordance with the September 29, 2008 addendum to Illinois EPA Application Log No. 2007-181, further characterization of the western boundary of the GMZ was submitted May 1, 2009 as Illinois EPA Application No. 2009-221 (approved by Modification No. 40). Based on the results of the GMZ investigation, groundwater quality to the west of the GMZ appeared unaffected by the Northern Unit. However, due to issues with the turbidity of the groundwater and sampling methodology, additional investigation was proposed. As a result of the issuance of Modification No. 40, Condition VIII.23 was revised requiring the installation of temporary investigation wells T1U-A, T1L-A, T2U-A, T2L-A, T3U-A, and T3L-A. In accordance with Condition VIII.23 of Modification No. 40, the results of the GMZ investigation report, submitted January 29, 2010 as Illinois EPA Application Log No. 2010-038 (approved by Permit Modification No. 50), indicated that concentrations of all organic and inorganic GMZ parameters, with the exception of dissolved ammonia, were non-detect or below the AGQS at T2U-A, T2L-A, and T3U-A. However, the investigation results indicated that dissolved ammonia concentrations west of Kilbuck Creek may be affected by background conditions and spatial variability, possibly associated with the agricultural land use of the area, and not fully represented by the Northern Unit AGQS.

Addendums 1 and 2 to Illinois EPA Application Log No. 2010-038, submitted September 16, 2010 and June 14, 2011, respectively, provided a comprehensive evaluation regarding the direction of groundwater movement in the vicinity of Northern Unit Compliance Boundary wells

G52S and G52M, including the Northern Unit GMZ temporary investigation wells. An additional evaluation was performed in response to Condition VIII.24 of Permit No. 2006-221-LF, identifying the extent of influence of construction dewatering activities in the North Expansion Unit (NEU), specifically in the vicinity of Northern Unit Compliance Boundary wells G52S and G52M and temporary investigation wells T1U-A, T1L-A, T2U-A, T2L-A, T3U-A, and T3L-A. Based on the evaluation, a northerly groundwater movement was maintained in the subject area prior to and subsequent to initiation of construction dewatering activities in the NEU due to Kilbuck Creek and the wetland mitigation area acting as a buffer against potential drawdown. As a result of consistent northerly groundwater movement, the dissolved ammonia concentrations in the groundwater west of Kilbuck Creek were determined to be affected by conditions present to the south and southeast and not the result of the Northern Unit. Further investigation for the dissolved ammonia exceedences at temporary investigation wells T2U-A, T2L-A, and T3U-A was refuted citing that dissolved ammonia sources other than the landfill are evidenced by: concentrations of dissolved ammonia upgradient to the facility waste units exceeding concentrations downgradient to the waste units during the December 2009 GMZ investigation; lack of additional indicator parameter exceedences during the GMZ investigation; and a demonstration that the Temporary GMZ Assessment Wells located west of Kilbuck Creek receive water from the south and southeast and are influenced by mixing of surface water and groundwater.

The most current reevaluation of the GMZ was conducted during 2012. Application Log No. 2012-171 was submitted to the Illinois EPA for review on May 1, 2012 and approved on October 2, 2012 as Permit Modification No. 57. The application concluded that although a few GMZ parameters are still detected at concentrations above background values, significant improvements to groundwater quality are evident as demonstrated by the decreases in individual parameter concentrations and GMZ extents. In addition, the organic constituents that prompted the remedial actions are typically not detected in groundwater downgradient of the facility. These improvements in groundwater quality demonstrate that the remedial measures are effective and appear to be functioning to correlate with the estimated timeline given in the initial GIA. No additional action was proposed as part of the 2012 evaluation.

7.2 Northern Unit

Table 6B lists all wells and parameters exhibiting a confirmed increase (as defined by Permit Condition VIII.13) during the review period (first quarter 2008 through third quarter 2012). In accordance with Permit Condition VIII.13, an exceedence is defined as any concentration that exceeds the respective AGQS/MAPC and/or any concentration of an organic parameter that exceeds the respective preceding concentration. The table accounts for only those parameters that were not monitored or evaluated as part of the GMZ.

In accordance with Condition VIII.15 of the permit, alternate source demonstrations were submitted for all confirmed exceedences listed on Table 6B. The application in which each exceedence was addressed is provided on the table for reference. With the exception of Log No. 2012-459, all of the referenced applications have been approved with the issuance of Permit Modification Nos. 46, 51, and 55. Application Log No. 2012-459 was submitted October 1, 2012 as an alternate source demonstration for the second quarter 2012 confirmed increase of tetrachloroethene at R03S. This application is currently pending Illinois EPA review.

8. CONCLUSIONS

The GIAs for both the Northern and Southern Units have been reviewed in accordance with 35 Ill. Adm. Code 813.303(b). It has been determined that the conditions applicable to the original assessment for the Southern Unit have not changed in such a way as to result in the violation of the groundwater standards pursuant to 35 Ill. Adm. Code 811.320 outside the zone of attenuation, and no monitoring well shows concentrations of constituents in groundwater greater than the groundwater quality standards that are attributable to the waste unit. It has been determined that the conditions applicable to the original assessment for the Northern Unit, Southern Unit and Southern Unit Expansion have not changed to alter the findings of that assessment.

Tables

Table 1 – Permit Modifications Since 2008 Renewal

Table 1
Permit Modifications Since 2008 Renewal

Winnebago Landfill
Permit Renewal Application

Permit Mod. No.	Application Log No.	Date Submitted	Date Approved	Description
43	2008-018	1/11/2008	4/13/2010	Permit Renewal
44	2006-454	11/22/2006	5/3/2010	Modifications to the Gas Management and Collection Systems
45	2010-270	6/1/2010	10/27/2010	2009 Annual Revised Closure and Post-Closure Care Cost Estimate
46	2010-152	4/13/2010	1/21/2011	Alternate Source Demonstration for First Quarter 2008 Through Third Quarter 2009 Exceedences
47	2011-067	2/18/2011	6/17/2011	Construction Certification for the Leachate Forcemain Along West-Side of Landfill
48	2011-143	4/21/2011	8/9/2011	Southern Unit Final Cover Revisions
49	2011-255	6/1/2011	8/26/2011	2010 Annual Revised Closure and Post-Closure Care Cost Estimate
50	2010-038	1/29/2010	9/22/2011	GMZ Investigation Results
51	2010-373	8/2/2010	10/7/2011	Alternate Source Demonstration for First Quarter 2010 Exceedences
	2010-490	10/12/2010		Alternate Source Demonstration for Second Quarter 2010 Exceedences
	2011-004	1/10/2011		Alternate Source Demonstration for Third Quarter 2010 Exceedences
	2011-118	4/8/2011		Alternate Source Demonstration for Fourth Quarter 2010 Exceedences
52	2010-475	11/3/2012	1/9/2012	Landfill Gas to Energy Facility
53	2011-451	10/12/2011	1/10/2012	Alternate Source Demonstration for Second Quarter 2011 Exceedences, Abandonment of G18S/D
54	2012-040	2/3/2012	4/24/2012	Alternate Source Demonstration for Third Quarter 2011 Exceedences
55	2012-143	4/17/2012	8/3/2012	Revised Interwell AGQS Value for Oil (Hexane Soluble)
	2012-189	5/14/2012		Alternate Source Demonstration for Fourth Quarter 2011 Exceedences
56	2012-133	4/13/2012	8/28/2012	Revised Interwell AGQS Value for Dissolved Chloride for the Southern Unit, G53M/S Added to GMZ Program
57	2012-171	5/1/2012	10/2/2012	Five Year GMZ Evaluation for the Northern Unit
58	2012-264	6/1/2012	10/29/2012	2011 Annual Revised Closure and Post-Closure Care Cost Estimate

Table 2A – Southern Unit Confirmed AGQS Exceedences

Table 2A
Southern Unit Confirmed AGQS/MAPC Exceedences
First Quarter 2008 through Third Quarter 2012

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	GW List	AGQS	1stQtr08	1stQtr08re	2ndQtr08	3rdQtr08	4thQtr08	1stQtr09	2ndQtr09	2ndQtr09re	3rdQtr09	4thQtr09	1stQtr10	2ndQtr10	3rdQtr10	4thQtr10	1stQtr11	2ndQtr11	3rdQtr11	4thQtr11	1stQtr12	2ndQtr12	3rdQtr12
G13S	1,4-Dichlorobenzene	ug/l	G2	5			< 1		< 1		< 1			< 1		< 1		3.6		12		13		15	
G13D	Ammonia as N, dissolved	mg/l	G1	1.481	< 0.09		0.36	5.8	8.4	15	70		32	25	15	250	200	170	280	23	13	18	15	12	9.8
G13S	Ammonia as N, dissolved	mg/l	G1	1.481	0.33		0.22	0.45	0.51	< 0.09	0.16		0.75	0.59	1.1	0.39	1.1	1.7	11	7	6	5.6	6.3	6.7	7.7
R05S	Ammonia as N, dissolved	mg/l	G1	1.481													3								
G13D	Arsenic, Dissolved	ug/l	G1	3.801	1.8		9.5	13	3.8	3.8	12		6.9	9.1	< 1	43	43	19	10	2.4	< 1	2.5	1.9	3.5	3
G13S	Arsenic, Dissolved	ug/l	G1	3.801	1.6		2.3	1.6	7.6	3.9	< 1		1.2	4.5	1.8	< 1	1.8	3.1	4.6	4.1	1.4	5.2	4.7	5.7	1.5
G13S	Benzene	ug/l	G2	5			< 1		< 1		< 1			1.2	< 1	1.6		4.1		3.7		4.7		6.1	
G13D	Boron, Dissolved	ug/l	G1	147.619	110		130	410	340	440	1800		2700	1900	250	7100	8500	6600	5000	950	360	690	480	410	310
G13S	Boron, Dissolved	ug/l	G1	147.619	77		96	90	100	160	81		100	100	150	93	200	280	440	470	470	410	250	220	230
G13D	Chloride, Dissolved	mg/l	G1	348	34		19	37	67	110	260		180	190	170	830	720	530	350	200	200	220	160	130	110
G22D	Chloride, Dissolved	mg/l	G1	348	200		57	64	150	120	210		55	400	420	430	240	320	240	280	300	300	280	260	310
G13D	Chlorobenzene	ug/l	G2	5			< 1		< 1		< 1			< 1		1.7		4		6.1		14		7.8	
G13S	Chlorobenzene	ug/l	G2	5			< 1		< 1		2.5	< 1		4.1	1.2	5.9		24		23		29		34	
G13S	Cyanide, Total	mg/l	G1	0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.0094	0.0075	< 0.005	< 0.005
G13D	Lead, Dissolved	ug/l	G1	1	< 1		< 1	< 1	< 1	< 1	< 1		< 1	< 1	< 1	4	7.8	1.6	< 1	< 1	< 1	< 1	< 1	< 1	< 1
G13D	Phenolics	ug/l	G2	5	< 5		8.5	< 5	< 5		18	16		< 5		49		11		< 5		< 5		< 5	
G13D	Specific Conductance	umhos	G1	3700	1975	920	506	688	693	1667	3750		2240	1047	1437	3750	1409	3770	436	2180	1844	2890	1982	1093	1008
G13D	Sulfate, Dissolved	mg/l	G1	420	420	420	390	140	170	570	580		70	280	310	270	360	260	190	280	300	230	170	150	170
G13D	Tetrahydrofuran	ug/l	G2	7			< 5		< 20		110			< 2.5		63		24		15		< 2		2	
G13D	Total Dissolved Solids	mg/l	G1	2800.31	1100		1100	1100	1200	1800	2500		1700	1800	1700	4200	3700	3100	2300	1600	1800	1400	1300	1100	1300
G13D	Zinc, Dissolved	ug/l	G1	204.21	1400		2800	100	45	170	62		34	470	< 6	1700	4800	1300	70	7	7.6	45	8.2	13	13

Note: A highlighted cell indicates an exceedence of the AGQS/MAPC value.
Andrews Engineering, Inc.

Table 2B – Southern Unit Confirmed Exceedences (Condition Viii.13)

Table 2B
Southern Unit Confirmed Exceedences
First Quarter 2008 through Third Quarter 2012

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	GW List	Application	AGQS	1stQtr08	1stQtr08re	2ndQtr08	3rdQtr08	4thQtr08	1stQtr09	2ndQtr09	2ndQtr09re	3rdQtr09	4thQtr09	1stQtr10	2ndQtr10	3rdQtr10	4thQtr10	1stQtr11	2ndQtr11	3rdQtr11	4thQtr11	1stQtr12	2ndQtr12	3rdQtr12
G13S	1,4-Dichlorobenzene	ug/l	G2		5			< 1		< 1		< 1			< 1		< 1		3.6		12		13		15	
A28D	Acetone	ug/l	G2	2011-118	100										< 5		< 5		5.1		< 5		11	< 5	< 5	
G13D	Ammonia as N, dissolved	mg/l	G1		1.481	< 0.09		0.36	5.8	8.4	15	70		32	25	15	250	200	170	280	23	13	18	15	12	9.8
G13S	Ammonia as N, dissolved	mg/l	G1		1.481	0.33		0.22	0.45	0.51	< 0.09	0.16		0.75	0.59	1.1	0.39	1.1	1.7	11	7	6	5.6	6.3	6.7	7.7
R05S	Ammonia as N, dissolved	mg/l	G1		1.481													3								
G13D	Arsenic, Dissolved	ug/l	G1		3.801	1.8		9.5	13	3.8	3.8	12		6.9	9.1	< 1	43	43	19	10	2.4	< 1	2.5	1.9	3.5	3
G13S	Arsenic, Dissolved	ug/l	G1		3.801	1.6		2.3	1.6	7.6	3.9	< 1		1.2	4.5	1.8	< 1	1.8	3.1	4.6	4.1	1.4	5.2	4.7	5.7	1.5
G13S	Benzene	ug/l	G2		5			< 1		< 1		< 1			1.2	< 1	1.6		4.1		3.7		4.7		6.1	
G13D	Boron, Dissolved	ug/l	G1		147.619	110		130	410	340	440	1800		2700	1900	250	7100	8500	6600	5000	950	360	690	480	410	310
G13S	Boron, Dissolved	ug/l	G1		147.619	77		96	90	100	160	81		100	100	150	93	200	280	440	470	470	410	250	220	230
A28D	Carbon disulfide	ug/l	G2	2011-118	5										< 1		< 1		3.5		< 1		< 1		< 1	
G13D	Chloride, Dissolved	mg/l	G1		348	34		19	37	67	110	260		180	190	170	830	720	530	350	200	200	220	160	130	110
G22D	Chloride, Dissolved	mg/l	G1	2011-004	348	200		57	64	150	120	210		55	400	420	430	240	320	240	280	300	300	280	260	310
G13D	Chlorobenzene	ug/l	G2		5			< 1		< 1		< 1			< 1		1.7		4		6.1		14		7.8	
G13S	Chlorobenzene	ug/l	G2		5			< 1		< 1		2.5	< 1		4.1	1.2	5.9		24		23		29		34	
G11D	cis-1,2-Dichloroethene	ug/l	G2	2010-152	5			T 3		6.6	4.5	2.6			3.6	2.7	2.4		2.9		2		1.2		1.2	
R11S	cis-1,2-Dichloroethene	ug/l	G2	2011-118	5			3		2.8		2.8			1.6		1.3		1.8	1.8	3		2.2		2.4	
G13S	Cyanide, Total	mg/l	G1		0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.0094	0.0075	< 0.005	< 0.005
G13D	Lead, Dissolved	ug/l	G1		1	< 1		< 1	< 1	< 1	< 1	< 1		< 1	< 1	< 1	4	7.8	1.6	< 1	< 1	< 1	< 1	< 1	< 1	
G13D	Phenolics	ug/l	G2		5	< 5		8.5	< 5	< 5		18	16		< 5		49		11		< 5		< 5		< 5	
G13D	Specific Conductance	umhos	G1		3700	1975	920	506	688	693	1667	3750		2240	1047	1437	3750	1409	3770	436	2180	1844	2890	1982	1093	1008
G13D	Sulfate, Dissolved	mg/l	G1		420	420	420	390	140	170	570	580		70	280	310	270	360	260	190	280	300	230	170	150	170
G11D	Tetrachloroethene	ug/l	G2	2010-152	5			T 1		5.2	2.6	2.2			3	2.9	2.3		3.3		2.6		1.8		2.9	
R11S	Tetrachloroethene	ug/l	G2	2012-459	5			< 1		< 1		< 1			< 1		< 1		1		1.1	1	1		1.5	1.2
G13D	Tetrahydrofuran	ug/l	G2		7			< 5		< 20		110			< 2.5		63		24		15		< 2		2	
G13D	Total Dissolved Solids	mg/l	G1		2800.31	1100		1100	1100	1200	1800	2500		1700	1800	1700	4200	3700	3100	2300	1600	1800	1400	1300	1100	1300
G11D	Trichloroethene	ug/l	G2	2010-152	10			T< 1		3.1	2	1.5			1.8	1.8	1.4		1.8		1.3		< 1		1.3	
R11S	Trichloroethene	ug/l	G2	2011-451	10			< 1		< 1		< 1			< 1		< 1		< 1		1.1	1.3	1		1.4	
G13D	Zinc, Dissolved	ug/l	G1		204.21	1400		2800	100	45	170	62		34	470	< 6	1700	4800	1300	70	7	7.6	45	8.2	13	13

Note: A highlighted cell indicates an exceedence of the AGQS/MAPC value.
Andrews Engineering, Inc.

Table 3 – Southern Unit Leachate Data

Table 3
Southern Unit Leachate Analytical

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	Alkalinity, Bicarbonate as CaCO3	mg/L	L1		5200	5000		5600		2400		
L302	Alkalinity, Bicarbonate as CaCO3	mg/L	L1		3700		3000		2300		5000	5400
L301	Aluminum, total	ug/L	L1		0.11	0.82		0.034		0.005		
L302	Aluminum, total	ug/L	L1		0.086		0.13		0.0056		0.055	0.24
L301	Ammonia as N, total	mg/L	L1	480	820	1100		1000		260		
L302	Ammonia as N, total	mg/L	L1	480	510		400		110		610	
L301	Antimony, total	ug/L	L1		< 0.006	< 0.003		< 0.003		0.0098		
L302	Antimony, total	ug/L	L1		0.032		0.01		0.0042		< 0.003	0.0055
L301	Arsenic, total	ug/L	L1	0.065	0.054	0.055		0.057		0.058		
L302	Arsenic, total	ug/L	L1	0.067	0.054		0.04		0.026		0.058	0.1
L301	Barium, total	ug/L	L1	0.78	0.26	0.27		0.34		0.46		
L302	Barium, total	ug/L	L1	0.47	0.09		0.41		0.2		0.32	0.49
L301	Beryllium, total	ug/L	L1		< 0.002	< 0.001		< 0.001		< 0.001		
L302	Beryllium, total	ug/L	L1		< 0.002		< 0.001		< 0.001		< 0.001	< 0.001
L301	Biochemical Oxygen Demand	mg/L	L1	200	240	130		72		68		
L302	Biochemical Oxygen Demand	mg/L	L1	190	1100		100		H 20		73	120
L301	Boron, total	ug/L	L1		7.3	6.6		7.8		4.7		
L302	Boron, total	ug/L	L1		0.96		4.4		3.2		7.8	7.3
L301	Cadmium, total	ug/L	L1	< 0.001	< 0.002	< 0.001		< 0.001		< 0.001		
L302	Cadmium, total	ug/L	L1	< 0.001	< 0.002		< 0.001		< 0.001		< 0.001	< 0.001
L301	Calcium, total	mg/L	L1		120	87		110		300		
L302	Calcium, total	mg/L	L1		17		220		260		130	99
L301	Chemical Oxygen Demand	mg/L	L1	1200	1300	1000		1600		700		
L302	Chemical Oxygen Demand	mg/L	L1	6100	7400		810		430		1200	1400
L301	Chloride, total	mg/L	L1		1600	1500		1900		960		
L302	Chloride, total	mg/L	L1		920		720		570		6.4	1400
L301	Chromium, total	ug/L	L1	0.054	0.098	0.093		0.17		0.062		
L302	Chromium, total	ug/L	L1	0.033	0.019		0.037		0.035		0.11	0.12
L301	Cobalt, total	ug/L	L1		0.027	0.025		0.034		0.014		
L302	Cobalt, total	ug/L	L1		0.0052		0.0096		0.011		0.027	0.021
L301	Copper, total	ug/L	L1	0.027	0.038	0.099		0.033		0.03		
L302	Copper, total	ug/L	L1	0.013	< 0.006		0.015		0.023		0.038	0.034
L301	Cyanide, total	mg/L	L1	< 0.005	< 0.005	< 0.005		< 0.005		< 0.005		
L302	Cyanide, total	mg/L	L1	< 0.005	< 0.005		< 0.005		< 0.005		< 0.005	< 0.005
L301	Fecal Coliform	/100mL	L1	700	< 10	20		< 10		1300		
L302	Fecal Coliform	/100mL	L1	300	< 10		36		120		< 10	< 10
L301	Fluoride, total	mg/L	L1	0.31	0.45	0.53		0.4		0.38		
L302	Fluoride, total	mg/L	L1	0.31	< 0.25		< 0.25		< 0.25		< 2.5	< 25
L301	Iron, total	ug/L	L1	4.7	1.4	2.9		2.6		8.2		
L302	Iron, total	ug/L	L1	2.5	3.3		8.8		19		2.1	3.5
L301	Lead, total	ug/L	L1	0.0019	0.0022	0.012		0.0016		0.0042		
L302	Lead, total	ug/L	L1	0.0011	< 0.002		0.0021		0.012		0.001	< 0.001
L301	Magnesium, total	mg/L	L1		250	230		230		230		
L302	Magnesium, total	mg/L	L1		35		200		170		230	150
L301	Manganese, total	ug/L	L1	0.16	0.18	0.13		0.097		0.61		
L302	Manganese, total	ug/L	L1	0.096	0.046		0.37		0.65		0.23	0.2
L301	Mercury, total	ug/L	L1	< 0.0002	< 0.0004	< 0.0002		< 0.0002		< 0.0002		
L302	Mercury, total	ug/L	L1	< 0.0002	< 0.0004		< 0.0002		< 0.0002		0.00032	< 0.0002
L301	Nickel, total	ug/L	L1	0.1	0.2	0.18		0.25		0.095		
L302	Nickel, total	ug/L	L1	0.058	0.034		0.08		0.065		0.18	0.13

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	Nitrate as N, total	mg/L	L1		< 0.02	0.9		< 0.5		< 0.2		
L302	Nitrate as N, total	mg/L	L1		< 0.02		< 0.2		< 0.2		<H 0.2	0.37
L301	pH	s.u.	L1	7.46		7.17		7.32		7.06	7.16	
L302	pH	s.u.	L1	6.96					7.24		7.24	8.95
L301	Phosphorus, total	mg/L	L1	2.9	5.1	4.2		6.2		2.4		
L302	Phosphorus, total	mg/L	L1	1.7	0.47		1.8		1.2		5.5	4.4
L301	Potassium, total	mg/L	L1		480	460		540		190		
L302	Potassium, total	mg/L	L1		74		210		110		450	440
L301	Selenium, total	ug/L	L1		0.027	0.026		0.07		0.022		
L302	Selenium, total	ug/L	L1		0.0046		0.01		0.011		0.068	0.095
L301	Silver, total	ug/L	L1	< 0.005	< 0.01	< 0.005		< 0.005		< 0.005		
L302	Silver, total	ug/L	L1	< 0.005	< 0.01		< 0.005		< 0.005		< 0.005	< 0.005
L301	Sodium, total	mg/L	L1		1400	1200		1600		810		
L302	Sodium, total	mg/L	L1		140		570		420		1300	1300
L301	Specific Conductance	umhos/cm	L1	8320				13550		7380	8380	
L302	Specific Conductance	umhos/cm	L1	9010					5350		10560	4440
L301	Sulfate, total	mg/L	L1		4.9	6		12		530		
L302	Sulfate, total	mg/L	L1		5.4		150		600		25	13
L301	Thallium, total	ug/L	L1		< 0.002	< 0.001		0.004		< 0.001		
L302	Thallium, total	ug/L	L1		< 0.002		< 0.001		< 0.001		< 0.001	< 0.001
L301	Tin, total	ug/L	L1		< 0.06	< 0.06		< 60		< 60		
L302	Tin, total	ug/L	L1		< 0.06		< 0.06		< 0.06		< 0.06	< 0.06
L301	Total Dissolved Solids	mg/L	L1	3900	6000	5300		6400		4600		
L302	Total Dissolved Solids	mg/L	L1	4300	4600		3300		3200		5300	5300
L301	Total Organic Carbon	mg/L	L1		600	290		350		170		
L302	Total Organic Carbon	mg/L	L1		1600		200		110		370	390
L301	Total Suspended Solids	mg/L	L1	48	5.6	69		4.8		240		
L302	Total Suspended Solids	mg/L	L1	12	6.4		30		120		4	16
L301	Vanadium, total	ug/L	L1		0.078			0.071		0.032		
L302	Vanadium, total	ug/L	L1		0.012		0.024		0.018		0.049	0.065
L301	Zinc, total	ug/L	L1	0.13	0.042	0.074		0.064		0.084		
L302	Zinc, total	ug/L	L1	0.058	0.021		0.078		0.096		0.027	0.019
L301	1,1,1,2-Tetrachloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,1,1,2-Tetrachloroethane	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,1,1-Trichloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,1,1-Trichloroethane	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,1,2,2-Tetrachloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,1,2,2-Tetrachloroethane	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,1,2-Trichloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,1,2-Trichloroethane	ug/L	L1		8				< 10		< 50	< 5
L301	1,1-Dichloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,1-Dichloroethane	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,1-Dichloroethene	ug/L	L1		< 1			< 1		< 1		
L302	1,1-Dichloroethene	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,1-Dichloropropene	ug/L	L1		< 1			< 1		< 1		
L302	1,1-Dichloropropene	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,2,3-Trichlorobenzene	ug/L	L1		< 1			< 1		< 1		
L302	1,2,3-Trichlorobenzene	ug/L	L1		< 1				< 10		< 50	< 5
L301	1,2,3-Trichloropropane	ug/L	L1		< 1			< 1		< 1		
L302	1,2,3-Trichloropropane	ug/L	L1		< 1		< 5		< 10		< 50	< 5

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	1,2,4-Trichlorobenzene	ug/L	L1		< 1	< 100		< 100		< 1		
L302	1,2,4-Trichlorobenzene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	1,2,4-Trimethylbenzene	ug/L	L1		44			19		12		
L302	1,2,4-Trimethylbenzene	ug/L	L1		57		19		< 10		< 50	14
L301	1,2-Dibromo-3-chloropropane	ug/L	L1		< 1			< 1		< 1		
L302	1,2-Dibromo-3-chloropropane	ug/L	L1		< 1		< 5		< 10		< 10	< 1
L301	1,2-Dibromoethane	ug/L	L1		< 1			< 1		< 1		
L302	1,2-Dibromoethane	ug/L	L1		< 1		< 5		< 10		< 10	< 1
L301	1,2-Dichlorobenzene	ug/L	L1		< 1			< 1		< 1		
L302	1,2-Dichlorobenzene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	1,2-Dichloroethane	ug/L	L1		< 1			< 1		< 1		
L302	1,2-Dichloroethane	ug/L	L1		29		< 5		< 10		< 50	< 5
L301	1,2-Dichloropropane	ug/L	L1		< 1			< 1		< 1		
L302	1,2-Dichloropropane	ug/L	L1		4		< 5		< 10		< 50	< 5
L301	1,3,5-Trimethylbenzene	ug/L	L1		10			5.3		5.1		
L302	1,3,5-Trimethylbenzene	ug/L	L1		17		7		< 10		< 50	< 5
L301	1,3-Dichlorobenzene	ug/L	L1		17			< 1		< 1		
L302	1,3-Dichlorobenzene	ug/L	L1		33		< 5		< 10		< 50	< 5
L301	1,3-Dichloropropane	ug/L	L1		< 1			< 1		< 1		
L302	1,3-Dichloropropane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	1,3-Dichloropropene	ug/L	L1		< 2			< 2		< 2		
L302	1,3-Dichloropropene	ug/L	L1		< 2		< 10		< 20		< 50	< 2
L301	1,4-Dichlorobenzene	ug/L	L1		16			7.7		11		
L302	1,4-Dichlorobenzene	ug/L	L1		31		14		< 10		< 50	6.8
L301	1-Propanol	ug/L	L1		< 200000			< 1000		< 1000		
L302	1-Propanol	ug/L	L1		240000		< 5000		< 10000		< 10000	2700
L301	2,2-Dichloropropane	ug/L	L1		< 1			< 1		< 1		
L302	2,2-Dichloropropane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	2,4,6-Trichlorophenol	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2,4,6-Trichlorophenol	ug/L	L1		< 10		< 100		< 100		< 500	< 500
L301	2,4-D	ug/L	L1		< 1	< 1		< 0.1		< 1		
L302	2,4-D	ug/L	L1		< 1		T< 0.1		< 0.1		3.3	< 1
L301	2,4-Dichlorophenol	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2,4-Dichlorophenol	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2,4-Dimethylphenol	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2,4-Dimethylphenol	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2,4-Dinitrophenol	ug/L	L1		< 50	< 500		< 500		Q,< 500		
L302	2,4-Dinitrophenol	ug/L	L1		< 50		< 500		< 500		< 500	< 500
L301	2,4-Dinitrotoluene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2,4-Dinitrotoluene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2,6-Dinitrotoluene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2,6-Dinitrotoluene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2-Butanone	ug/L	L1		3600			44		< 5		
L302	2-Butanone	ug/L	L1		24000		46		< 50		< 100	2100
L301	2-Chloroethyl vinyl ether	ug/L	L1					< 10		< 10		
L302	2-Chloroethyl vinyl ether	ug/L	L1						< 100		< 50	< 5
L301	2-Chloronaphthalene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2-Chloronaphthalene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2-Chlorophenol	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2-Chlorophenol	ug/L	L1		< 10		< 100		< 100		< 100	< 100

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	2-Chlorotoluene	ug/L	L1		< 1			< 1		< 1		
L302	2-Chlorotoluene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	2-Hexanone	ug/L	L1		160			< 5		< 5		
L302	2-Hexanone	ug/L	L1		360		< 25		< 50		< 100	12
L301	2-Nitrophenol	ug/L	L1		< 10	< 100		< 100		< 100		
L302	2-Nitrophenol	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	2-Propanol	ug/L	L1					< 1000		< 1000		
L302	2-Propanol	ug/L	L1						< 10000		< 10000	8000
L301	3,3'-Dichlorobenzidine	ug/L	L1		< 20	< 200		< 200		< 200		
L302	3,3'-Dichlorobenzidine	ug/L	L1		< 20		< 200		< 200		< 200	< 200
L301	4,4'-DDD	ug/L	L1		< 1	< 1		< 1		< 1		
L302	4,4'-DDD	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	4,4'-DDE	ug/L	L1		< 1	< 1		< 1		< 1		
L302	4,4'-DDE	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	4,4'-DDT	ug/L	L1		< 1	< 1		< 1		< 1		
L302	4,4'-DDT	ug/L	L1		< 1		V< 1		< 1		< 1	< 1
L301	4,6-Dinitro-2-methylphenol	ug/L	L1		< 50	< 500		< 500		Q,< 500		
L302	4,6-Dinitro-2-methylphenol	ug/L	L1		< 50		< 500		< 500		< 500	< 500
L301	4-Bromophenyl-phenylether	ug/L	L1		< 10	< 100		< 100		< 100		
L302	4-Bromophenyl-phenylether	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	4-Chlorophenyl-phenyl Ether	ug/L	L1		< 10	< 100		< 100		< 100		
L302	4-Chlorophenyl-phenyl Ether	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	4-Chlorotoluene	ug/L	L1		< 1			< 1		< 1		
L302	4-Chlorotoluene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	4-Methyl-2-pentanone	ug/L	L1		< 1000			< 5		< 5		
L302	4-Methyl-2-pentanone	ug/L	L1		2400		< 25		< 50		< 100	70
L301	4-Methylphenol	ug/L	L1		12	< 100		< 100		< 100		
L302	4-Methylphenol	ug/L	L1		370		< 100		< 100		< 100	330
L301	4-Nitrophenol	ug/L	L1		< 10	< 100		< 100		Q,< 100		
L302	4-Nitrophenol	ug/L	L1		< 10		< 100		< 100		< 500	< 500
L301	Acenaphthene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Acenaphthene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Acetone	ug/L	L1		7600			18		< 10		
L302	Acetone	ug/L	L1		40000		150		< 100		< 100	3100
L301	Alachlor	ug/L	L1		< 4	< 4		< 0.4		< 4		
L302	Alachlor	ug/L	L1		< 4		< 0.4		< 0.4		< 4	< 4
L301	Aldicarb	ug/L	L1		< 4	< 4		2.9		< 4		
L302	Aldicarb	ug/L	L1		< 4		< 0.4		< 0.4		< 2	< 2
L301	Aldrin	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	Aldrin	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	alpha-BHC	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	alpha-BHC	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	Anthracene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Anthracene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Atrazine	ug/L	L1		< 2	< 2		< 0.2		C< 2		
L302	Atrazine	ug/L	L1		< 2		< 0.2		< 0.2		< 2	< 2
L301	Benzene	ug/L	L1		14			4.3		5.3		
L302	Benzene	ug/L	L1		36		8		< 10		< 50	5.9
L301	Benzo(a)anthracene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Benzo(a)anthracene	ug/L	L1		< 10		< 100		< 100		< 100	< 100

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	Benzo(a)pyrene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Benzo(a)pyrene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Benzo(b)fluoranthene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Benzo(b)fluoranthene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Benzo(g,h,i)perylene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Benzo(g,h,i)perylene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Benzo(k)fluoranthene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Benzo(k)fluoranthene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	beta-BHC	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	beta-BHC	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	bis(2-Chloroethoxy)methane	ug/L	L1		< 10	< 100		< 100		< 100		
L302	bis(2-Chloroethoxy)methane	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	bis(2-Chloroethyl) Ether	ug/L	L1		< 10	< 100		< 100		< 100		
L302	bis(2-Chloroethyl) Ether	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	bis(2-Chloroisopropyl)Ether	ug/L	L1		< 10	< 100		< 100		< 100		
L302	bis(2-Chloroisopropyl)Ether	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	bis(2-Ethylhexyl)phthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	bis(2-Ethylhexyl)phthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	bis(Chloromethyl) ether	ug/L	L1		< 10000			< 10000		< 10000		
L302	bis(Chloromethyl) ether	ug/L	L1		< 10000		< 10000		< 100000		< 100000	< 200000
L301	Bromobenzene	ug/L	L1		< 1			< 1		< 1		
L302	Bromobenzene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Bromochloromethane	ug/L	L1		< 1			< 1		< 1		
L302	Bromochloromethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Bromodichloromethane	ug/L	L1		< 1			< 1		< 1		
L302	Bromodichloromethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Bromoform	ug/L	L1		< 1			< 1		< 1		
L302	Bromoform	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Bromomethane	ug/L	L1		< 2			< 2		< 2		
L302	Bromomethane	ug/L	L1		< 2		< 10		< 20		< 50	< 5
L301	Butylbenzylphthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Butylbenzylphthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Carbofuran	ug/L	L1		< 15	< 15		< 1.5		< 15		
L302	Carbofuran	ug/L	L1		< 15		< 1.5		< 1.5		< 2	< 2
L301	Carbon Disulfide	ug/L	L1		< 1			< 1		21		
L302	Carbon Disulfide	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Carbon Tetrachloride	ug/L	L1		< 1			< 1		< 1		
L302	Carbon Tetrachloride	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Chlordane	ug/L	L1		< 5	< 5		< 5		< 5		
L302	Chlordane	ug/L	L1		< 5		< 5		< 5		< 5	< 5
L301	Chlorobenzene	ug/L	L1		1			< 1		< 1		
L302	Chlorobenzene	ug/L	L1		1		< 5		< 10		< 50	< 5
L301	Chloroethane	ug/L	L1		< 2			< 2		< 2		
L302	Chloroethane	ug/L	L1		< 2		< 10		< 20		< 50	< 5
L301	Chloroform	ug/L	L1		< 1			< 1		< 1		
L302	Chloroform	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Chloromethane	ug/L	L1		< 2			< 2		< 2		
L302	Chloromethane	ug/L	L1		< 2		< 10		< 20		< 50	< 5
L301	Chrysene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Chrysene	ug/L	L1		< 10		< 100		< 100		< 100	< 100

Table 3
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	cis-1,2-Dichloroethene	ug/L	L1		7			< 1		< 1		
L302	cis-1,2-Dichloroethene	ug/L	L1		27		< 5		< 10		< 200	< 20
L301	delta-BHC	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	delta-BHC	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	Dibenzo(a,h)anthracene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Dibenzo(a,h)anthracene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Dibromochloromethane	ug/L	L1		< 1			< 1		< 1		
L302	Dibromochloromethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Dibromomethane	ug/L	L1		< 1			< 1		< 1		
L302	Dibromomethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Dichlorodifluoromethane	ug/L	L1		< 2			< 2		< 2		
L302	Dichlorodifluoromethane	ug/L	L1		< 2		< 10		< 20		< 50	< 5
L301	Dieldrin	ug/L	L1		< 1	< 1		< 1		< 1		
L302	Dieldrin	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	Diethylphthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Diethylphthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Dimethylphthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Dimethylphthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Di-n-butylphthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Di-n-butylphthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Di-n-octylphthalate	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Di-n-octylphthalate	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Dioxin Screen	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Dioxin Screen	ug/L	L1		< 10		< 100		< 100		< 500	< 500
L301	Endosulfan I	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	Endosulfan I	ug/L	L1		< 0.5		< 0.5		< 0.5		< 1	< 1
L301	Endosulfan II	ug/L	L1		< 1	< 1		< 1		< 1		
L302	Endosulfan II	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	Endosulfan Sulfate	ug/L	L1		< 1	< 1		< 1		< 1		
L302	Endosulfan Sulfate	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	Endrin	ug/L	L1		< 1	< 1		< 1		< 1		
L302	Endrin	ug/L	L1		< 1		< 1		< 1		< 1	< 1
L301	Endrin Aldehyde	ug/L	L1		< 1	< 1		< 1		< 1		
L302	Endrin Aldehyde	ug/L	L1		< 1		V< 1		< 1		< 1	< 1
L301	Ethyl Acetate	ug/L	L1		< 2000			< 10		14		
L302	Ethyl Acetate	ug/L	L1		< 2000		< 50		< 100		< 50	< 5
L301	Ethylbenzene	ug/L	L1		62			32		43		
L302	Ethylbenzene	ug/L	L1		100		60		< 10		< 50	32
L301	Fluoranthene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Fluoranthene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	Fluorene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Fluorene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	gamma-BHC (Lindane)	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	gamma-BHC (Lindane)	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	Heptachlor	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	Heptachlor	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	Heptachlor Epoxide	ug/L	L1		< 0.5	< 0.5		< 0.5		< 0.5		
L302	Heptachlor Epoxide	ug/L	L1		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5
L301	Hexachlorobenzene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Hexachlorobenzene	ug/L	L1		< 10		< 100		< 100		< 100	< 100

Table 3
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	Hexachlorobutadiene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Hexachlorobutadiene	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	Hexachlorocyclopentadiene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Hexachlorocyclopentadiene	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	Hexachloroethane	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Hexachloroethane	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	Hexane Ext. Material (HEM) by SPE	mg/L	L1	<P 5	P,< 5	P,< 5		P,< 5		P< 6		
L302	Hexane Ext. Material (HEM) by SPE	mg/L	L1	<P 5	P,< 5		P,< 6		< 6		< 5	< 5
L301	Indeno(1,2,3-cd)pyrene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Indeno(1,2,3-cd)pyrene	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	Iodomethane	ug/L	L1		< 1			< 1		< 1		
L302	Iodomethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Isopropylbenzene	ug/L	L1		4			1.7		2.4		
L302	Isopropylbenzene	ug/L	L1		8		< 5		< 10		< 50	7.6
L301	m,p-Xylene	ug/L	L1		130			48		9.1		
L302	m,p-Xylene	ug/L	L1		240		100		< 10		74	47
L301	Methoxychlor	ug/L	L1		< 5	< 5		< 5		< 5		
L302	Methoxychlor	ug/L	L1		< 5		< 5		< 5		< 5	< 5
L301	Methylene Chloride	ug/L	L1		8			< 5		< 5		
L302	Methylene Chloride	ug/L	L1		20		< 25		< 50		< 50	< 5
L301	m-Xylene	ug/L	L1					48				
L302	m-Xylene	ug/L	L1									
L301	Naphthalene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Naphthalene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	n-Butanol	ug/L	L1		< 200000			< 1000		< 1000		
L302	n-Butanol	ug/L	L1		210000		< 5000		< 10000		< 10000	3600
L301	n-Butylbenzene	ug/L	L1		< 1			< 1		< 1		
L302	n-Butylbenzene	ug/L	L1		2		< 5		< 10		< 50	< 5
L301	Nitrobenzene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Nitrobenzene	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	N-Nitrosodimethylamine	ug/L	L1		< 10	< 100		< 100		< 100		
L302	N-Nitrosodimethylamine	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	N-Nitroso-di-n-propylamine	ug/L	L1			< 100		< 100		< 100		
L302	N-Nitroso-di-n-propylamine	ug/L	L1					< 100	< 100	< 100	< 100	< 100
L301	N-Nitrosodiphenylamine	ug/L	L1		< 10	< 100		< 100		< 100		
L302	N-Nitrosodiphenylamine	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	n-Propylbenzene	ug/L	L1		4			1.8		1.9		
L302	n-Propylbenzene	ug/L	L1		7		< 5		< 10		< 50	< 5
L301	o-Xylene	ug/L	L1		59			23		17		
L302	o-Xylene	ug/L	L1		120		43		< 10		< 50	23
L301	Parathion	ug/L	L1		< 2	< 2		< 0.2		< 2		
L302	Parathion	ug/L	L1		< 2		< 0.2		< 0.2		< 2	< 2
L301	Pentachlorophenol	ug/L	L1		< 0.5	< 0.5		< 0.05		< 0.5		
L302	Pentachlorophenol	ug/L	L1		< 0.5		T< 0.05		< 0.05		< 0.4	< 0.4
L301	Phenanthrene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Phenanthrene	ug/L	L1		< 10		< 100	< 100	< 100	< 100	< 100	< 100
L301	Phenolics	ug/L	L1	0.17	0.12	1.3		QR< 0.025		0.058		
L302	Phenolics	ug/L	L1	0.96	0.94		0.068		0.065		0.038	1.2
L301	p-Isopropyltoluene	ug/L	L1		15			5		< 1		
L302	p-Isopropyltoluene	ug/L	L1		28		28		< 10		< 50	< 5

Table 3
Southern Unit Leachate Analytical

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	2ndQtr12
L301	Polychlorinated Biphenyls(PCBs)	ug/L	L1		< 5	< 5		< 5		< 5		
L302	Polychlorinated Biphenyls(PCBs)	ug/L	L1		< 5		< 5		< 5		< 5	< 10
L301	p-Xylene	ug/L	L1					48				
L302	p-Xylene	ug/L	L1									
L301	Pyrene	ug/L	L1		< 10	< 100		< 100		< 100		
L302	Pyrene	ug/L	L1		< 10		< 100		< 100		< 100	< 100
L301	sec-Butylbenzene	ug/L	L1		< 1			< 1		< 1		
L302	sec-Butylbenzene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Silvex	ug/L	L1		< 0.5	< 0.5		< 0.05		< 0.5		
L302	Silvex	ug/L	L1		< 0.5		T< 0.05		< 0.05		< 0.5	1.3
L301	Styrene	ug/L	L1		< 1			< 1		< 1		
L302	Styrene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	tert-Butylbenzene	ug/L	L1		< 1			< 1		< 1		
L302	tert-Butylbenzene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Tetrachloroethene	ug/L	L1		< 1			< 1		< 1		
L302	Tetrachloroethene	ug/L	L1		6		< 5		< 10		< 50	< 5
L301	Tetrahydrofuran	ug/L	L1		4300	2100		1400		50		
L302	Tetrahydrofuran	ug/L	L1		15000		1100		220		770	1000
L301	Toluene	ug/L	L1		150			2.6		2.3		
L302	Toluene	ug/L	L1		440		54		< 10		< 50	16
L301	Toxaphene	ug/L	L1		< 15	< 15		< 15		< 15		
L302	Toxaphene	ug/L	L1		< 15		< 15		< 15		< 5	< 5
L301	trans-1,2-Dichloroethene	ug/L	L1		< 1			< 1		< 1		
L302	trans-1,2-Dichloroethene	ug/L	L1		< 1		< 5		< 10		< 200	< 20
L301	trans-1,3-Dichloropropene	ug/L	L1		< 1			< 1		< 1		
L302	trans-1,3-Dichloropropene	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	trans-1,4-Dichloro-2-butene	ug/L	L1		< 1			< 1		< 1		
L302	trans-1,4-Dichloro-2-butene	ug/L	L1		17		< 5		< 10		< 50	< 5
L301	Trichloroethene	ug/L	L1		< 1			< 1		< 1		
L302	Trichloroethene	ug/L	L1		9		< 5		< 10		< 50	< 5
L301	Trichlorofluoromethane	ug/L	L1		< 1			< 1		< 1		
L302	Trichlorofluoromethane	ug/L	L1		< 1		< 5		< 10		< 50	< 5
L301	Vinyl Acetate	ug/L	L1		< 5			< 5		< 5		
L302	Vinyl Acetate	ug/L	L1		< 5		< 25		< 50		< 50	< 5
L301	Vinyl Chloride	ug/L	L1		< 2			< 2		< 2		
L302	Vinyl Chloride	ug/L	L1		< 2		< 10		< 20		< 50	< 5
L301	Xylenes (Total)	ug/L	L1		190			71		26		
L302	Xylenes (Total)	ug/L	L1		360		140		< 30		< 150	70

Table 4 – Southern Unit Leachate Evaluation

Table 4
Southern Unit Leachate Comparison to GIA Source Concentration

Winnebago Landfill
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Parameter	Units	Maximum Leachate Concentration	AGQS	Model Prediction Factor	Predicted Model Concentration (PMC)	Pass ? If PMC<AGQS
Inorganics						
Alkalinity, Bicarbonate as CaCO ₃	mg/l	5600	960	0.00410	22.96000	YES
Aluminum, total	mg/l	0.82	8316.62	0.00016	0.00013	YES
Ammonia as N, total	mg/l	1100	0.65	0.00005	0.05830	YES
Antimony, total	ug/l	0.032	3	0.00567	0.00018	YES
Arsenic, total	ug/l	0.1	3.69	0.00583	0.00058	YES
Barium, total	ug/l	0.78	295.31	0.00144	0.00112	YES
Beryllium, total	ug/l	ND	2.66	0.01120	NA	YES
Biochemical Oxygen Demand	mg/l	1100	7.16	NA	NA	YES
Boron, total	ug/l	7.8	179.1	0.00040	0.00309	YES
Cadmium, total	ug/l	ND	2.63	0.00467	NA	YES
Calcium, total	mg/l	300	231.36	0.00413	1.23900	YES
Chemical Oxygen Demand	mg/l	7400	12.91	NA	NA	YES
Chloride, total	mg/l	1900	190	0.00576	10.94210	YES
Chromium, Hexavalent	mg/l	NA	NA	0.00064	NA	YES
Chromium, total	ug/l	0.17	30.59	0.00100	0.00017	YES
Cobalt, total	ug/l	0.034	4.99	0.00127	0.00004	YES
Copper, total	ug/l	0.099	8.75	0.00087	0.00009	YES
Cyanide, total	mg/l	ND	0.005	0.00847	NA	YES
Fecal Coliform	cfu/100 ml	1300	NA	NA	NA	YES
Fluoride, total	mg/l	0.53	1.46	0.00074	0.00039	YES
Iron, total	ug/l	19	8201	0.00002	0.00034	YES
Lead, total	ug/l	0.012	4.68	0.00005	0.00000	YES
Magnesium, total	mg/l	250	110.28	0.00442	1.10600	YES
Manganese, total	ug/l	0.65	528.32	0.00040	0.00026	YES
Mercury, total	ug/l	0.00032	0.2	0.00064	0.00000	YES
Nickel, total	ug/l	0.25	61.28	0.00193	0.00048	YES
Nitrate as N, total	mg/l	0.9	18.2108	0.00639	0.00575	YES
pH	units	8.95	NA	NA	NA	YES
Phosphorus, total	mg/l	6.2	NA	0.00016	0.00097	YES
Potassium, total	mg/l	540	14.2869	0.01023	5.52636	YES
Selenium, total	ug/l	0.095	4.8	0.00769	0.00073	YES
Silver, total	mg/l	ND	5	0.00167	NA	YES
Sodium, total	mg/l	1600	51.238	0.00058	0.92000	YES
Specific Conductance	umhos/cm3	13550	3770	NA	NA	YES
Sulfate, total	mg/l	600	288.005	0.02626	15.75420	YES
Thallium, total	ug/l	0.004	3.76	0.00170	0.00001	YES
Tin, total	ug/l	ND	NA	NA	NA	YES
Total Dissolved Solids	mg/l	6400	2800.31	0.00580	37.12000	YES
Total Organic Carbon	mg/l	1600	9.61	NA	NA	YES
Total Suspended Solids	mg/l	240	NA	NA	NA	YES
Vanadium, total	ug/l	0.078	9.496	0.00080	0.00006	YES
Zinc, total	ug/l	0.13	121.64	0.00016	0.00002	YES
Organics						
1,1,1,2-Tetrachloroethane	ug/l	ND	5	NA	NA	YES
1,1,1-Trichloroethane	ug/l	ND	5	0.00664	NA	YES
1,1,2,2-Tetrachloroethane	ug/l	ND	5	NA	NA	YES
1,1,2-Trichloroethane	ug/l	8	5	NA	NA	YES
1,1-Dichloroethane	ug/l	ND	5	0.00664	NA	YES
1,1-Dichloroethene	ug/l	ND	5	NA	NA	YES
1,1-Dichloropropene	ug/l	ND	5	NA	NA	YES
1,2,3-Trichlorobenzene	ug/l	ND	5	NA	NA	YES
1,2,3-Trichloropropane	ug/l	ND	5	NA	NA	YES
1,2,4-Trichlorobenzene	ug/l	ND	5	NA	NA	YES
1,2,4-Trimethylbenzene	ug/l	57	5	0.00637	0.36309	YES
1,2-Dibromo-3-chloropropane	ug/l	ND	5	0.00664	NA	YES
1,2-Dibromoethane	ug/l	ND	5	NA	NA	YES
1,2-Dichlorobenzene	ug/l	ND	5	0.00004	NA	YES
1,2-Dichloroethane	ug/l	29	5	0.00664	0.19247	YES
1,2-Dichloropropane	ug/l	4	5	NA	NA	YES
1,3,5-Trimethylbenzene	ug/l	17	5	0.00664	0.11283	YES
1,3-Dichlorobenzene	ug/l	33	5	0.00004	0.00127	YES
1,3-Dichloropropane	ug/l	ND	5	NA	NA	YES
1,3-Dichloropropene	ug/l	ND	5	NA	NA	YES
1,4-Dichlorobenzene	ug/l	31	5	0.00004	0.00119	YES
1-Propanol (2Q08 max)	ug/l	240000	1000	0.00580	1392.00000	NO
1-Propanol (2Q12 max)	ug/l	2700	1000	0.00580	15.66000	YES
2,2-Dichloropropane	ug/l	ND	5	NA	NA	YES
2,4,6-Trichlorophenol	ug/l	ND	NA	NA	NA	YES
2,4-D	ug/l	3.3	10	0.00064	0.00210	YES
2,4-Dichlorophenol	ug/l	ND	NA	NA	NA	YES
2,4-Dimethylphenol	ug/l	ND	NA	NA	NA	YES

Table 4
Southern Unit Leachate Comparison to GIA Source Concentration

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Maximum Leachate Concentration	AGQS	Model Prediction Factor	Predicted Model Concentration (PMC)	Pass ? if PMC<AGQS
2,4-Dinitrophenol	ug/l	ND	NA	NA	NA	YES
2,4-Dinitrotoluene	ug/l	ND	NA	NA	NA	YES
2,6-Dinitrotoluene	ug/l	ND	NA	NA	NA	YES
2-Butanone (2Q08 Max)	ug/l	24000	10	0.00083	19.99200	NO
2-Butanone (2Q12 Max)	ug/l	2100	10	0.00083	1.74930	YES
2-Chloroethyl vinyl ether	ug/l	ND	NA	NA	NA	YES
2-Chloronaphthalene	ug/l	ND	NA	NA	NA	YES
2-Chlorophenol	ug/l	ND	NA	NA	NA	YES
2-Chlorotoluene	ug/l	ND	1	0.00004	NA	YES
2-Hexanone	ug/l	360	50	0.00660	2.37600	YES
2-Nitrophenol	ug/l	ND	NA	NA	NA	YES
2-Propanol	ug/l	8000	1000	0.00580	46.40000	YES
3,3'-Dichlorobenzidine	ug/l	ND	NA	NA	NA	YES
4,4'-DDD	ug/l	ND	NA	NA	NA	YES
4,4'-DDE	ug/l	ND	NA	NA	NA	YES
4,4'-DDT	ug/l	ND	0.1	NA	NA	YES
4,6-Dinitro-2-methylphenol	ug/l	ND	NA	NA	NA	YES
4-Bromophenyl-phenylether	ug/l	ND	NA	NA	NA	YES
4-Chlorophenyl-phenyl Ether	ug/l	ND	NA	NA	NA	YES
4-Chlorotoluene	ug/l	ND	1	NA	NA	YES
4-Methyl-2-pentanone (2Q08 Max)	ug/l	2400	10	0.00664	15.92880	NO
4-Methyl-2-pentanone (2Q12 Max)	ug/l	70	10	0.00664	0.46459	YES
4-Methylphenol	ug/l	370	10	0.00064	0.23680	YES
4-Nitrophenol	ug/l	ND	NA	NA	NA	YES
Acenaphthene	ug/l	ND	NA	NA	NA	YES
Acetone (2Q08 Max)	ug/l	40000	100	0.00653	261.24000	NO
Acetone (2Q12 Max)	ug/l	3100	100	0.00653	20.24610	YES
Alachlor	ug/l	ND	2	0.00664	NA	YES
Aldicarb	ug/l	2.9	1	0.00664	0.01926	YES
Aldrin	ug/l	ND	0.5	NA	NA	YES
alpha-BHC	ug/l	ND	NA	NA	NA	YES
Anthracene	ug/l	ND	NA	NA	NA	YES
Atrazine	ug/l	ND	3	NA	NA	YES
Benzene	ug/l	36	5	0.00664	0.23893	YES
Benzo(a)anthracene	ug/l	ND	NA	NA	NA	YES
Benzo(a)pyrene	ug/l	ND	10	NA	NA	YES
Benzo(b)fluoranthene	ug/l	ND	NA	NA	NA	YES
Benzo(g,h,i)perylene	ug/l	ND	NA	NA	NA	YES
Benzo(k)fluoranthene	ug/l	ND	NA	NA	NA	YES
beta-BHC	ug/l	ND	NA	NA	NA	YES
bis(2-Chloroethoxy)methane	ug/l	ND	NA	NA	NA	YES
bis(2-Chloroethyl) Ether	ug/l	ND	NA	NA	NA	YES
bis(2-Chloroisopropyl)Ether	ug/l	ND	NA	NA	NA	YES
bis(2-Ethylhexyl)phthalate	ug/l	ND	72	NA	NA	YES
bis(Chloromethyl) ether	ug/l	ND	10	NA	NA	YES
Bromobenzene	ug/l	ND	5	NA	NA	YES
Bromochloromethane	ug/l	ND	5	NA	NA	YES
Bromodichloromethane	ug/l	ND	5	NA	NA	YES
Bromoform	ug/l	ND	5	NA	NA	YES
Bromomethane	ug/l	ND	10	0.00664	NA	YES
Butylbenzylphthalate	ug/l	ND	NA	NA	NA	YES
Carbofuran	ug/l	ND	10	NA	NA	YES
Carbon Disulfide	ug/l	21	5	0.00664	0.13938	YES
Carbon Tetrachloride	ug/l	ND	5	NA	NA	YES
Chlordane	ug/l	ND	10	NA	NA	YES
Chlorobenzene	ug/l	1	5	NA	NA	YES
Chloroethane	ug/l	ND	10	0.00664	NA	YES
Chloroform	ug/l	ND	5	0.00664	NA	YES
Chloromethane	ug/l	ND	10	NA	NA	YES
Chrysene	ug/l	ND	NA	NA	NA	YES
cis-1,2-Dichloroethene	ug/l	27	5	0.00664	0.17928	YES
delta-BHC	ug/l	ND	NA	NA	NA	YES
Dibenzo(a,h)anthracene	ug/l	ND	NA	NA	NA	YES
Dibromochloromethane	ug/l	ND	5	NA	NA	YES
Dibromomethane	ug/l	ND	5	NA	NA	YES
Dichlorodifluoromethane	ug/l	ND	5	0.00664	NA	YES
Dieldrin	ug/l	ND	0.25	NA	NA	YES
Diethylphthalate	ug/l	ND	100	NA	NA	YES
Dimethylphthalate	ug/l	ND	100	NA	NA	YES
Di-n-butylphthalate	ug/l	ND	100	NA	NA	YES
Di-n-octylphthalate	ug/l	ND	NA	NA	NA	YES
Dioxin Screen	ug/l	ND	NA	NA	NA	YES
Endosulfan I	ug/l	ND	NA	NA	NA	YES
Endosulfan II	ug/l	ND	NA	NA	NA	YES
Endosulfan Sulfate	ug/l	ND	NA	NA	NA	YES
Endrin	ug/l	ND	0.25	NA	NA	YES
Endrin Aldehyde	ug/l	ND	NA	NA	NA	YES
Ethyl Acetate	ug/l	14	NA	NA	NA	YES
Ethylbenzene	ug/l	100	5	0.00664	0.66370	YES
Fluoranthene	ug/L	ND	NA	NA	NA	YES

Table 4
Southern Unit Leachate Comparison to GIA Source Concentration

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Maximum Leachate Concentration	AGQS	Model Prediction Factor	Predicted Model Concentration (PMC)	Pass ? if PMC<AGQS
Fluorene	ug/l	ND	NA	NA	NA	YES
gamma-BHC (Lindane)	ug/l	ND	10	NA	NA	YES
Heptachlor	ug/l	ND	10	NA	NA	YES
Heptachlor Epoxide	ug/l	ND	10	NA	NA	YES
Hexachlorobenzene	ug/l	ND	NA	NA	NA	YES
Hexachlorobutadiene	ug/l	ND	10	NA	NA	YES
Hexachlorocyclopentadiene	ug/l	ND	10	NA	NA	YES
Hexachloroethane	ug/l	ND	NA	NA	NA	YES
Hexane Ext. Material (HEM) by SPE	mg/l	ND	5	0.00003	NA	YES
Indeno(1,2,3-cd)pyrene	ug/l	ND	NA	NA	NA	YES
Iodomethane	ug/l	ND	1	NA	NA	YES
Isopropylbenzene	ug/l	4	5	0.00660	0.02640	YES
m,p-Xylene	ug/l	130	5	0.00005	0.00663	YES
Methoxychlor	ug/l	ND	10	NA	NA	YES
Methylene Chloride	ug/l	20	10	0.00664	0.13274	YES
m-Xylene	ug/l	48	5	0.00004	0.00185	YES
Naphthalene	ug/l	ND	10	0.00604	NA	YES
n-Butanol	ug/l	210000	1000	NA	NA	YES
n-Butylbenzene	ug/l	2	5	0.00004	0.00008	YES
Nitrobenzene	ug/l	ND	NA	NA	NA	YES
N-Nitrosodimethylamine	ug/l	ND	NA	NA	NA	YES
N-Nitroso-di-n-propylamine	ug/l	ND	NA	NA	NA	YES
N-Nitrosodiphenylamine	ug/l	ND	NA	NA	NA	YES
n-Propylbenzene	ug/l	7	5	0.00004	0.00027	YES
o-Xylene	ug/l	120	5	0.00664	0.79644	YES
Parathion	ug/l	ND	10	0.00064	NA	YES
Pentachlorophenol	ug/l	ND	50	NA	NA	YES
Phenanthrene	ug/l	ND	NA	NA	NA	YES
Phenolics	ug/l	1.3	5	0.00064	0.00083	YES
p-Isopropyltoluene	ug/l	28	5	0.00664	0.18584	YES
Polychlorinated Biphenyls(PCBs)	ug/l	ND	5	0.00660	NA	YES
p-Xylene	ug/l	48	5	0.00004	0.00185	YES
Pyrene	ug/l	ND	NA	NA	NA	YES
sec-Butylbenzene	ug/l	1	5	NA	NA	YES
Silvex	ug/l	1.3	2	NA	NA	YES
Styrene	ug/l	ND	5	0.00664	NA	YES
tert-Butylbenzene	ug/l	ND	5	NA	NA	YES
Tetrachloroethene	ug/l	6	5	0.00664	0.03982	YES
Tetrahydrofuran	ug/l	15000	7	0.00019	2.88000	YES
Toluene	ug/l	440	5	0.00182	0.80080	YES
Toxaphene	ug/l	ND	10	NA	NA	YES
trans-1,2-Dichloroethene	ug/l	ND	5	NA	NA	YES
trans-1,3-Dichloropropene	ug/l	ND	5	NA	NA	YES
trans-1,4-Dichloro-2-butene	ug/l	17	5	NA	NA	YES
Trichloroethene	ug/l	9	10	0.00664	0.05973	YES
Trichlorofluoromethane	ug/l	ND	5	0.00664	NA	YES
Vinyl Acetate	ug/l	ND	10	0.00004	NA	YES
Vinyl Chloride	ug/l	ND	2	0.00004	NA	YES
Xylenes (Total)	ug/l	360	5	0.00134	0.48132	YES

Notes

Notes:
NA - No AGQS Value
ND - Not Detected

** The Model Prediction Factors were determined in the 2002 Renewal application by dividing the "computer simulated concentration" by the "Initial source concentration" from the original GIA.

Table 5 – Southern Unit/Expansion Wedge Leachate Evaluation

Table 5
Southern Unit Expansion - Leachate Evaluation

Winnebago Landfill
Permit Renewal Application

Parameters	Units	AGQS	Max Leach. Conc.	Model Prediction Factor	Max Predicted Concentration	Pass?
Inorganics						
Alkalinity, Bicarbonate as CaCO3	mg/l	960.000	5600	2.37E-07	1.33E-03	YES
Aluminum, total	mg/l	8316.620	0.82	2.37E-07	1.94E-07	YES
Ammonia as N, total	mg/l	0.650	1100	2.37E-07	2.61E-04	YES
Antimony, total	ug/l	3.000	0.032	2.37E-07	7.58E-09	YES
Arsenic, total	ug/l	3.690	0.1	2.37E-07	2.37E-08	YES
Barium, total	ug/l	295.310	0.78	2.37E-07	1.85E-07	YES
Beryllium, total	ug/l	2.660	ND	2.37E-07	NA	YES
Biochemical Oxygen Demand	mg/l	7.160	1100	2.37E-07	2.61E-04	YES
Boron, total	ug/l	179.100	7.8	2.37E-07	1.85E-06	YES
Cadmium, total	ug/l	2.630	ND	2.37E-07	NA	YES
Calcium, total	mg/l	231.360	300	2.37E-07	7.11E-05	YES
Chemical Oxygen Demand	mg/l	12.910	7400	2.37E-07	1.75E-03	YES
Chloride, total	mg/l	190.000	1900	2.37E-07	4.50E-04	YES
Chromium, Hexavalent	mg/l	NA	NA	2.37E-07	NA	YES
Chromium, total	ug/l	30.590	0.17	2.37E-07	4.03E-08	YES
Cobalt, total	ug/l	4.990	0.034	2.37E-07	8.06E-09	YES
Copper, total	ug/l	8.750	0.099	2.37E-07	2.35E-08	YES
Cyanide, total	mg/l	0.005	ND	2.37E-07	NA	YES
Fecal Coliform	cfu/100 ml	NA	1300	2.37E-07	3.08E-04	YES
Fluoride, total	mg/l	1.460	0.53	2.37E-07	1.26E-07	YES
Iron, total	ug/l	8201.000	19	2.37E-07	4.50E-06	YES
Lead, total	ug/l	4.680	0.012	2.37E-07	2.84E-09	YES
Magnesium, total	mg/l	110.280	250	2.37E-07	5.93E-05	YES
Manganese, total	ug/l	528.320	0.65	2.37E-07	1.54E-07	YES
Mercury, total	ug/l	0.200	0.00032	2.37E-07	7.58E-11	YES
Nickel, total	ug/l	61.280	0.25	2.37E-07	5.93E-08	YES
Nitrate as N, total	mg/l	18.211	0.9	2.37E-07	2.13E-07	YES
pH	units	NA	8.95	2.37E-07	2.12E-06	YES
Phosphorus, total	mg/l	NA	6.2	2.37E-07	1.47E-06	YES
Potassium, total	mg/l	14.287	540	2.37E-07	1.28E-04	YES
Selenium, total	ug/l	4.800	0.095	2.37E-07	2.25E-08	YES
Silver, total	mg/l	5.000	ND	2.37E-07	NA	YES
Sodium, total	mg/l	51.238	1600	2.37E-07	3.78E-04	YES
Specific Conductance	umhos/cm3	3770.000	13550	2.37E-07	3.21E-03	YES
Sulfate, total	mg/l	288.005	600	2.37E-07	1.42E-04	YES
Thallium, total	ug/l	3.760	0.004	2.37E-07	9.48E-10	YES
Tin, total	ug/l	NA	ND	2.37E-07	NA	YES
Total Dissolved Solids	mg/l	2800.310	6400	2.37E-07	1.52E-03	YES
Total Organic Carbon	mg/l	9.610	1600	2.37E-07	3.78E-04	YES
Total Suspended Solids	mg/l	NA	240	2.37E-07	5.69E-05	YES
Vanadium, total	ug/l	9.496	0.078	2.37E-07	1.85E-08	YES
Zinc, total	ug/l	121.640	0.13	2.37E-07	3.08E-08	YES
Organics						
1,1,1,2-Tetrachloroethane	ug/l	5.000	ND	2.37E-07	NA	YES
1,1,1-Trichloroethane	ug/l	5.000	ND	2.37E-07	NA	YES
1,1,2,2-Tetrachloroethane	ug/l	5.000	ND	2.37E-07	NA	YES
1,1,2-Trichloroethane	ug/l	5.000	8	2.37E-07	1.90E-06	YES
1,1-Dichloroethane	ug/l	5.000	ND	2.37E-07	NA	YES
1,1-Dichloroethene	ug/l	5.000	ND	2.37E-07	NA	YES
1,1-Dichloropropene	ug/l	5.000	ND	2.37E-07	NA	YES
1,2,3-Trichlorobenzene	ug/l	5.000	ND	2.37E-07	NA	YES
1,2,3-Trichloropropane	ug/l	5.000	ND	2.37E-07	NA	YES
1,2,4-Trichlorobenzene	ug/l	5.000	ND	2.37E-07	NA	YES
1,2,4-Trimethylbenzene	ug/l	5.000	57	2.37E-07	1.35E-05	YES
1,2-Dibromo-3-chloropropane	ug/l	5.000	ND	2.37E-07	NA	YES
1,2-Dibromoethane	ug/l	5.000	ND	2.37E-07	NA	YES
1,2-Dichlorobenzene	ug/l	5.000	ND	2.37E-07	NA	YES
1,2-Dichloroethane	ug/l	5.000	29	2.37E-07	6.87E-06	YES
1,2-Dichloropropane	ug/l	5.000	4	2.37E-07	9.48E-07	YES
1,3,5-Trimethylbenzene	ug/l	5.000	17	2.37E-07	4.03E-06	YES
1,3-Dichlorobenzene	ug/l	5.000	33	2.37E-07	7.82E-06	YES
1,3-Dichloropropane	ug/l	5.000	ND	2.37E-07	NA	YES
1,3-Dichloropropene	ug/l	5.000	ND	2.37E-07	NA	YES
1,4-Dichlorobenzene	ug/l	5.000	31	2.37E-07	7.35E-06	YES
1-Propanol	ug/l	1000.000	240000	2.37E-07	5.69E-02	YES
2,2-Dichloropropane	ug/l	5.000	ND	2.37E-07	NA	YES
2,4,6-Trichlorophenol	ug/l	NA	ND	2.37E-07	NA	YES
2,4-D	ug/l	10.000	3.3	2.37E-07	7.82E-07	YES
2,4-Dichlorophenol	ug/L	NA	ND	2.37E-07	NA	YES
2,4-Dimethylphenol	ug/l	NA	ND	2.37E-07	NA	YES

Table 5
Southern Unit Expansion - Leachate Evaluation

Winnebago Landfill
Permit Renewal Application

Parameters	Units	AGQS	Max Leach. Conc.	Model Prediction Factor	Max Predicted Concentration	Pass?
2,4-Dinitrophenol	ug/l	NA	ND	2.37E-07	NA	YES
2,4-Dinitrotoluene	ug/l	NA	ND	2.37E-07	NA	YES
2,6-Dinitrotoluene	ug/l	NA	ND	2.37E-07	NA	YES
2-Butanone	ug/l	10,000	24000	2.37E-07	5.69E-03	YES
2-Chloroethyl vinyl ether	ug/l	NA	ND	2.37E-07	NA	YES
2-Chloronaphthalene	ug/l	NA	ND	2.37E-07	NA	YES
2-Chlorophenol	ug/l	NA	ND	2.37E-07	NA	YES
2-Chlorotoluene	ug/l	1,000	ND	2.37E-07	NA	YES
2-Hexanone	ug/l	50,000	360	2.37E-07	8.53E-05	YES
2-Nitrophenol	ug/l	NA	ND	2.37E-07	NA	YES
2-Propanol	ug/l	1000,000	8000	2.37E-07	1.90E-03	YES
3,3'-Dichlorobenzidine	ug/l	NA	ND	2.37E-07	NA	YES
4,4'-DDD	ug/l	NA	ND	2.37E-07	NA	YES
4,4'-DDE	ug/l	NA	ND	2.37E-07	NA	YES
4,4'-DDT	ug/l	0.100	ND	2.37E-07	NA	YES
4,6-Dinitro-2-methylphenol	ug/l	NA	ND	2.37E-07	NA	YES
4-Bromophenyl-phenylether	ug/l	NA	ND	2.37E-07	NA	YES
4-Chlorophenyl-phenyl Ether	ug/l	NA	ND	2.37E-07	NA	YES
4-Chlorotoluene	ug/l	1,000	ND	2.37E-07	NA	YES
4-Methyl-2-pentanone	ug/l	10,000	2400	2.37E-07	5.69E-04	YES
4-Methylphenol	ug/l	10,000	370	2.37E-07	8.77E-05	YES
4-Nitrophenol	ug/l	NA	ND	2.37E-07	NA	YES
Acenaphthene	ug/l	NA	ND	2.37E-07	NA	YES
Acetone	ug/l	100,000	40000	2.37E-07	9.48E-03	YES
Alachlor	ug/l	2,000	ND	2.37E-07	NA	YES
Aldicarb	ug/l	1,000	2.9	2.37E-07	6.87E-07	YES
Aldrin	ug/l	0,500	ND	2.37E-07	NA	YES
alpha-BHC	ug/l	NA	ND	2.37E-07	NA	YES
Anthracene	ug/l	NA	ND	2.37E-07	NA	YES
Atrazine	ug/l	3,000	ND	2.37E-07	NA	YES
Benzene	ug/l	5,000	36	2.37E-07	8.53E-06	YES
Benzo(a)anthracene	ug/l	NA	ND	2.37E-07	NA	YES
Benzo(a)pyrene	ug/l	10,000	ND	2.37E-07	NA	YES
Benzo(b)fluoranthene	ug/l	NA	ND	2.37E-07	NA	YES
Benzo(g,h,i)perylene	ug/l	NA	ND	2.37E-07	NA	YES
Benzo(k)fluoranthene	ug/l	NA	ND	2.37E-07	NA	YES
beta-BHC	ug/l	NA	ND	2.37E-07	NA	YES
bis(2-Chloroethoxy)methane	ug/l	NA	ND	2.37E-07	NA	YES
bis(2-Chloroethyl) Ether	ug/l	NA	ND	2.37E-07	NA	YES
bis(2-Chloroisopropyl)Ether	ug/l	NA	ND	2.37E-07	NA	YES
bis(2-Ethylhexyl)phthalate	ug/l	72,000	ND	2.37E-07	NA	YES
bis(Chloromethyl) ether	ug/l	10,000	ND	2.37E-07	NA	YES
Bromobenzene	ug/l	5,000	ND	2.37E-07	NA	YES
Bromochloromethane	ug/l	5,000	ND	2.37E-07	NA	YES
Bromodichloromethane	ug/l	5,000	ND	2.37E-07	NA	YES
Bromofom	ug/l	5,000	ND	2.37E-07	NA	YES
Bromomethane	ug/l	10,000	ND	2.37E-07	NA	YES
Butylbenzylphthalate	ug/l	NA	ND	2.37E-07	NA	YES
Carbofuran	ug/l	10,000	ND	2.37E-07	NA	YES
Carbon Disulfide	ug/l	5,000	21	2.37E-07	4.98E-06	YES
Carbon Tetrachloride	ug/l	5,000	ND	2.37E-07	NA	YES
Chlordane	ug/l	10,000	ND	2.37E-07	NA	YES
Chlorobenzene	ug/l	5,000	1	2.37E-07	2.37E-07	YES
Chloroethane	ug/l	10,000	ND	2.37E-07	NA	YES
Chloroform	ug/l	5,000	ND	2.37E-07	NA	YES
Chloromethane	ug/l	10,000	ND	2.37E-07	NA	YES
Chrysene	ug/l	NA	ND	2.37E-07	NA	YES
cis-1,2-Dichloroethene	ug/l	5,000	27	2.37E-07	6.40E-06	YES
delta-BHC	ug/l	NA	ND	2.37E-07	NA	YES
Dibenzo(a,h)anthracene	ug/l	NA	ND	2.37E-07	NA	YES
Dibromochloromethane	ug/l	5,000	ND	2.37E-07	NA	YES
Dibromomethane	ug/l	5,000	ND	2.37E-07	NA	YES
Dichlorodifluoromethane	ug/l	5,000	ND	2.37E-07	NA	YES
Dieldrin	ug/l	0.250	ND	2.37E-07	NA	YES
Diethylphthalate	ug/l	100,000	ND	2.37E-07	NA	YES
Dimethylphthalate	ug/l	100,000	ND	2.37E-07	NA	YES
Di-n-butylphthalate	ug/l	100,000	ND	2.37E-07	NA	YES
Di-n-octylphthalate	ug/l	NA	ND	2.37E-07	NA	YES
Dioxin Screen	ug/l	NA	ND	2.37E-07	NA	YES
Endosulfan I	ug/l	NA	ND	2.37E-07	NA	YES
Endosulfan II	ug/l	NA	ND	2.37E-07	NA	YES
Endosulfan Sulfate	ug/l	NA	ND	2.37E-07	NA	YES
Endrin	ug/l	0.250	ND	2.37E-07	NA	YES
Endrin Aldehyde	ug/l	NA	ND	2.37E-07	NA	YES
Ethyl Acetate	ug/l	NA	14	2.37E-07	3.32E-06	YES
Ethylbenzene	ug/l	5,000	100	2.37E-07	2.37E-05	YES
Fluoranthene	ug/L	NA	ND	2.37E-07	NA	YES

Table 5
Southern Unit Expansion - Leachate Evaluation

Winnebago Landfill
Permit Renewal Application

Parameters	Units	AGQS	Max Leach. Conc.	Model Prediction Factor	Max Predicted Concentration	Pass?
Fluorene	ug/l	NA	ND	2.37E-07	NA	YES
gamma-BHC (Lindane)	ug/l	10,000	ND	2.37E-07	NA	YES
Heptachlor	ug/l	10,000	ND	2.37E-07	NA	YES
Heptachlor Epoxide	ug/l	10,000	ND	2.37E-07	NA	YES
Hexachlorobenzene	ug/l	NA	ND	2.37E-07	NA	YES
Hexachlorobutadiene	ug/l	10,000	ND	2.37E-07	NA	YES
Hexachlorocyclopentadiene	ug/l	10,000	ND	2.37E-07	NA	YES
Hexachloroethane	ug/l	NA	ND	2.37E-07	NA	YES
Hexane Ext. Material (HEM) by S	mg/l	5,000	ND	2.37E-07	NA	YES
Indeno(1,2,3-cd)pyrene	ug/l	NA	ND	2.37E-07	NA	YES
Iodomethane	ug/l	1,000	ND	2.37E-07	NA	YES
Isopropylbenzene	ug/l	5,000	4	2.37E-07	9.48E-07	YES
m,p-Xylene	ug/l	5,000	130	2.37E-07	3.08E-05	YES
Methoxychlor	ug/l	10,000	ND	2.37E-07	NA	YES
Methylene Chloride	ug/l	10,000	20	2.37E-07	4.74E-06	YES
m-Xylene	ug/l	5,000	48	2.37E-07	1.14E-05	YES
Naphthalene	ug/l	10,000	ND	2.37E-07	NA	YES
n-Butanol	ug/l	1000,000	210000	2.37E-07	4.98E-02	YES
n-Butylbenzene	ug/l	5,000	2	2.37E-07	4.74E-07	YES
Nitrobenzene	ug/l	NA	ND	2.37E-07	NA	YES
N-Nitrosodimethylamine	ug/l	NA	ND	2.37E-07	NA	YES
N-Nitroso-di-n-propylamine	ug/l	NA	ND	2.37E-07	NA	YES
N-Nitrosodiphenylamine	ug/l	NA	ND	2.37E-07	NA	YES
n-Propylbenzene	ug/l	5,000	7	2.37E-07	1.66E-06	YES
o-Xylene	ug/l	5,000	120	2.37E-07	2.84E-05	YES
Parathion	ug/l	10,000	ND	2.37E-07	NA	YES
Pentachlorophenol	ug/l	50,000	ND	2.37E-07	NA	YES
Phenanthrene	ug/l	NA	ND	2.37E-07	NA	YES
Phenolics	ug/l	5,000	1.3	2.37E-07	3.08E-07	YES
p-Isopropyltoluene	ug/l	5,000	28	2.37E-07	6.64E-06	YES
Polychlorinated Biphenyls(PCBs)	ug/l	5,000	ND	2.37E-07	NA	YES
p-Xylene	ug/l	5,000	48	2.37E-07	1.14E-05	YES
Pyrene	ug/l	NA	ND	2.37E-07	NA	YES
sec-Butylbenzene	ug/l	5,000	1	2.37E-07	2.37E-07	YES
Silvex	ug/l	2,000	1.3	2.37E-07	3.08E-07	YES
Styrene	ug/l	5,000	ND	2.37E-07	NA	YES
tert-Butylbenzene	ug/l	5,000	ND	2.37E-07	NA	YES
Tetrachloroethene	ug/l	5,000	6	2.37E-07	1.42E-06	YES
Tetrahydrofuran	ug/l	7,000	15000	2.37E-07	3.56E-03	YES
Toluene	ug/l	5,000	440	2.37E-07	1.04E-04	YES
Toxaphene	ug/l	10,000	ND	2.37E-07	NA	YES
trans-1,2-Dichloroethene	ug/l	5,000	ND	2.37E-07	NA	YES
trans-1,3-Dichloropropene	ug/l	5,000	ND	2.37E-07	NA	YES
trans-1,4-Dichloro-2-butene	ug/l	5,000	17	2.37E-07	4.03E-06	YES
Trichloroethene	ug/l	10,000	9	2.37E-07	2.13E-06	YES
Trichlorofluoromethane	ug/l	5,000	ND	2.37E-07	NA	YES
Vinyl Acetate	ug/l	10,000	ND	2.37E-07	NA	YES
Vinyl Chloride	ug/l	2,000	ND	2.37E-07	NA	YES
Xylenes (Total)	ug/l	5,000	360	2.37E-07	8.53E-05	YES

Notes:
NA - No AGQS Value
ND - Not Detected

Table 6a – Northern Unit Confirmed AGQS Exceedences

Table 6A
Northern Unit Confirmed AGQS/MAPC Exceedences
First Quarter 2008 through Third Quarter 2012

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	GW List	AGQS	1stQtr08	1stQtr08re	2ndQtr08	3rdQtr08	4thQtr08	1stQtr09	2ndQtr09	2ndQtr09re	3rdQtr09	4thQtr09	1stQtr10	2ndQtr10	3rdQtr10	4thQtr10	1stQtr11	2ndQtr11	3rdQtr11	4thQtr11	1stQtr12	2ndQtr12	3rdQtr12
G13D	Sulfate, Dissolved	mg/l	G1	360	420		390	190	170	570	580		70	280	310	270	360	260	190	280	300	230	170	150	170
G13D	Acetone	ug/l	G2	10		< 10			< 10		18	< 5		< 5		13		8.6	< 5		< 5		< 5		
G09D	Benzene	ug/l	G2	2.8			2		2		2.3	< 1		1		1.9		< 1		1.2		2.5		3.2	
G13D	Benzene	ug/l	G2	2.8		< 1			< 1		< 1			< 1		< 1		< 1		1.7		3.7	2.7	2.2	
G13S	Benzene	ug/l	G2	2.8		< 1			< 1		< 1			1.2	< 1	1.6		4.1		3.7		4.7		6.1	
G09D	Chlorobenzene	ug/l	G2	5			5		5		8.8	< 1		4		8.8		11		8.5		4.9		10	
G09M	Chlorobenzene	ug/l	G2	5			3		2.2		< 1			1.4	3.2	< 1		5.9	5.7	3.3		6.6		3.8	
G13D	Chlorobenzene	ug/l	G2	5		< 1			< 1		< 1			< 1		1.7		4		6.1		14		7.8	
G13S	Chlorobenzene	ug/l	G2	5		< 1			< 1		2.5	< 1		4.1	1.2	5.9		24		23		29		34	
G20D	cis-1,2-Dichloroethene	ug/l	G2	5			10		19	13	8.8	8		13	11	10		P 11		7.4		7.1		2.5	
G33D	pH (field)	units	G1	5.4 - 8.1	6.97		6.77	7.56	7.81	7.97	8.18		7.58	7.52	7.12	7.61	7.76		7.14	7.78	7.09	8.48	8.16	6.94	7.58
G33S	pH (field)	units	G1	5.4 - 8.1	6.88		6.75	7.94	8.11	7.85	8.08		7.8	7.41	7.26	7.66	7.84		7.2	7.96	7.4	8.16	9	7.01	7.3

Notes:
A highlighted cell indicates an exceedence of the AGQS/MAPC value.
All confirmed AGQS/MAPC exceedences from first quarter 2008 through third quarter 2012 were addressed in accordance with Permit Condition VIII.15 (Modification No. 1

Table 6b – Northern Unit Confirmed Exceedences (Condition Viii.13)

Table 6B
Northern Unit Confirmed Exceedences
First Quarter 2008 through Third Quarter 2012

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	GW List	Application	AGQS	1stQtr08	1stQtr08re	2ndQtr08	3rdQtr08	4thQtr08	1stQtr09	2ndQtr09	2ndQtr09re	3rdQtr09	4thQtr09	1stQtr10	2ndQtr10	3rdQtr10	4thQtr10	1stQtr11	2ndQtr11	3rdQtr11	4thQtr11	1stQtr12	2ndQtr12	3rdQtr12
G20D	1,1,1-Trichloroethane	ug/l	G2	2010-373	12			1		< 1		< 1			< 1		1.2		P 1		< 1		1.2		< 1	
G20D	1,1-Dichloroethane	ug/l	G2	2010-152	31			2		4	2.3	1.5			3.4	2.4	2.5		P 2.4		1.8		2		< 1	
G51S	1,1-Dichloroethane	ug/l	G2	2010-373	31							< 1			< 1		1.3		1.7		1.2					
G09D	1,2-Dichlorobenzene	ug/l	G2	2010-373	5			< 1		< 1		1.6	< 1		< 1		2		< 1		1.9		1.8		2	
G13D	Acetone	ug/l	G2	2010-373	10			< 10		< 10		18	< 5		< 5		13		8.6		< 5		< 5		< 5	
G09D	Benzene	ug/l	G2	2010-373	2.8			2		2		2.3	< 1		1		1.9		< 1		1.2		2.5		3.2	
G13D	Benzene	ug/l	G2	2012-189	2.8			< 1		< 1		< 1			< 1		< 1		< 1		1.7		3.7	2.7	2.2	
G13S	Benzene	ug/l	G2	2010-373	2.8			< 1		< 1		< 1			1.2	< 1	1.6		4.1		3.7		4.7		6.1	
G51S	Benzene	ug/l	G2	2010-373	2.8							1.2			< 1		1.1		1.8		2.3					
G09D	Chlorobenzene	ug/l	G2	2010-373	5			5		5		8.8	< 1		4		8.8		11		8.5		4.9		10	
G09M	Chlorobenzene	ug/l	G2	2011-118	5			3		2.2		< 1			1.4	3.2	< 1	5.9	5.7	3.3		6.6		3.8		
G13D	Chlorobenzene	ug/l	G2	2010-373	5			< 1		< 1		< 1			< 1		1.7		4		6.1		14		7.8	
G13S	Chlorobenzene	ug/l	G2	2010-373	5			< 1		< 1		2.5	< 1		4.1	1.2	5.9		24		23		29		34	
G51S	Chlorobenzene	ug/l	G2	2010-373	5							2.9			< 1		1.1		3.7		2.9					
G03M	cis-1,2-Dichloroethene	ug/l	G2	2010-152	5			1		1		1.5	1.2		< 1		< 1		< 1		< 1		< 1		< 1	
G20D	cis-1,2-Dichloroethene	ug/l	G2	2010-152	5			10		19	13	8.8	8		13	11	10		P 11		7.4		7.1		2.5	
G41S	cis-1,2-Dichloroethene	ug/l	G2	2010-373	5			2		2		1.8			1.1		1.2		< 1		< 1		< 1		< 1	
G51S	cis-1,2-Dichloroethene	ug/l	G2	2011-118	5							< 1			< 1		< 1		1.9	1.2	< 1					
R03S	cis-1,2-Dichloroethene	ug/l	G2	2011-118	5			1		2	1.6	1.6			1.5		< 1		1.5	1.1	< 1		< 1		< 1	
R39S	cis-1,2-Dichloroethene	ug/l	G2	2011-118	5							< 1			< 1		< 1		1.2	1.4	1.1				< 1	
G33D	pH (field)	units	G1	2012-189	5.4 - 8.1	6.97		6.77	7.56	7.81	7.97	8.18		7.58	7.52	7.12	7.61	7.76		7.14	7.78	7.09	8.48	8.16	6.94	7.58
G33S	pH (field)	units	G1	2012-189	5.4 - 8.1	6.88		6.75	7.94	8.11	7.85	8.08		7.8	7.41	7.26	7.66	7.84		7.2	7.96	7.4	8.16	9	7.01	7.3
G13D	Phenolics	ug/l	G2	2010-152	100	< 5		8.5	< 5	< 5		18	16		< 5		49		11		< 5		< 5		< 5	
G52S	Phenolics	ug/l	G2	2010-373	100										< 5		17		< 5		< 5		< 5		< 5	
R39S	Phenolics	ug/l	G2	2010-373	100							< 5			< 5		16		< 5		< 5		< 5		< 5	
G13D	Sulfate, Dissolved	mg/l	G1	2010-152	360	420	420	390	190	170	570	580		70	280	310	270	360	260	190	280	300	230	170	150	170
G03M	Tetrachloroethene	ug/l	G2	2010-152	26			1		2	1.4	1.4			< 1		1.4		4.2		< 1		1.3		1.7	
G20D	Tetrachloroethene	ug/l	G2	2010-373	26			< 1		1		1.2	< 1		< 1		1.2		P 3.6		1.1		1.1		1.4	
G41D	Tetrachloroethene	ug/l	G2	2010-152	26			< 1		1		1.4	1.3		1.4		1.4		< 1		2.1		< 1		1.1	
R03S	Tetrachloroethene	ug/l	G2	2012-459	26			< 1		1		< 1			1		< 1		3.6	< 1	1.2		< 1		1.3	1.1
G20D	Trichloroethene	ug/l	G2	2010-152	66			3		4	3.6	3.4			2.7		3		P 2.5		2.2		2.1		1.4	

Note: A highlighted cell indicates an exceedence of the AGQS/MAPC value.
Andrews Engineering, Inc.

Table 7 – Northern Unit Leachate Analytical

**Table 7
Northern Unit Leachate Analytical**

**Winnebago Landfill
Permit Renewal Application**

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Alkalinity, Bicarbonate as CaCO3	mg/L	L1		13000	9200				15000		
L315	Alkalinity, Bicarbonate as CaCO3	mg/L	L1				4300				2500	
L317	Alkalinity, Bicarbonate as CaCO3	mg/L	L1		5800				8000			
L318	Alkalinity, Bicarbonate as CaCO3	mg/L	L1					6700				8600
L313	Aluminum, total	ug/L	L1		0.25	0.16				5		
L315	Aluminum, total	ug/L	L1				0.16				0.22	
L317	Aluminum, total	ug/L	L1		0.12				1.8			
L318	Aluminum, total	ug/L	L1					0.66				0.4
L313	Antimony, total	ug/L	L1		0.1	0.075				0.036		
L315	Antimony, total	ug/L	L1				0.034				0.013	
L317	Antimony, total	ug/L	L1		0.015				0.02			
L318	Antimony, total	ug/L	L1					0.013				0.017
L313	Arsenic, total	ug/L	L1	1.7	1	0.73				0.24		
L315	Arsenic, total	ug/L	L1				0.46				0.14	
L317	Arsenic, total	ug/L	L1	1.8	0.93				0.38			
L318	Arsenic, total	ug/L	L1					0.34				0.59
L313	Barium, total	ug/L	L1	0.56	0.35	0.51				0.3		
L315	Barium, total	ug/L	L1				0.32				0.3	
L317	Barium, total	ug/L	L1	0.83	0.43				0.84			
L318	Barium, total	ug/L	L1					0.77				0.82
L313	Beryllium, total	ug/L	L1	< 0.002	< 0.001					< 0.001		
L315	Beryllium, total	ug/L	L1				< 0.001				< 0.001	
L317	Beryllium, total	ug/L	L1	< 0.002					< 0.001			
L318	Beryllium, total	ug/L	L1					< 0.001				< 0.001
L313	Biochemical Oxygen Demand	mg/L	L1	570	650	550				1000		
L315	Biochemical Oxygen Demand	mg/L	L1				190				65	
L317	Biochemical Oxygen Demand	mg/L	L1	H 630	480				260			
L318	Biochemical Oxygen Demand	mg/L	L1					270				250
L313	Boron, total	ug/L	L1		6.7	15				15		
L315	Boron, total	ug/L	L1				4.1				2	
L317	Boron, total	ug/L	L1		12				11			
L318	Boron, total	ug/L	L1					11				11
L313	Cadmium, total	ug/L	L1	< 0.002	< 0.002	< 0.001				0.0068		
L315	Cadmium, total	ug/L	L1				< 0.001				< 0.001	
L317	Cadmium, total	ug/L	L1	< 0.002	< 0.002				0.0013			
L318	Cadmium, total	ug/L	L1					< 0.001				< 0.001
L313	Calcium, total	mg/L	L1		7.2	24				42		
L315	Calcium, total	mg/L	L1				50				130	
L317	Calcium, total	mg/L	L1		16				60			
L318	Calcium, total	mg/L	L1					44				43
L313	Total Organic Carbon	mg/L	L1		2500	1000				4700		
L315	Total Organic Carbon	mg/L	L1				570				250	
L317	Total Organic Carbon	mg/L	L1		1500				1300			
L318	Total Organic Carbon	mg/L	L1					1200				1300
L313	Chemical Oxygen Demand	mg/L	L1	8900	8300	5100				11000		
L315	Chemical Oxygen Demand	mg/L	L1				2000				870	
L317	Chemical Oxygen Demand	mg/L	L1	6000	5200				5800			
L318	Chemical Oxygen Demand	mg/L	L1					5200				5800

**Table 7
Northern Unit Leachate Analytical**

**Winnebago Landfill
Permit Renewal Application**

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Chloride, total	mg/L	L1		5.7	4400				7600		
L315	Chloride, total	mg/L	L1				2600				3.3	
L317	Chloride, total	mg/L	L1		3100				4500			
L318	Chloride, total	mg/L	L1					6400				4500
L313	Chromium, total	ug/L	L1	0.88	0.6	0.49				0.93		
L315	Chromium, total	ug/L	L1				0.26				0.15	
L317	Chromium, total	ug/L	L1	0.22	0.12				0.36			
L318	Chromium, total	ug/L	L1					0.41				0.37
L313	Cobalt, total	ug/L	L1		0.084	0.1				0.13		
L315	Cobalt, total	ug/L	L1				0.03				0.013	
L317	Cobalt, total	ug/L	L1		0.054				0.09			
L318	Cobalt, total	ug/L	L1					0.1				0.098
L313	Copper, total	ug/L	L1	0.078	0.044	0.073				0.29		
L315	Copper, total	ug/L	L1				0.019				0.015	
L317	Copper, total	ug/L	L1	0.062	0.03				0.078			
L318	Copper, total	ug/L	L1					0.037				0.11
L313	Cyanide, total	mg/L	L1	0.0076	0.0058	0.02				P 0.019		
L315	Cyanide, total	mg/L	L1				< 0.005				< 0.005	
L317	Cyanide, total	mg/L	L1	0.019	< 0.005				0.0096			
L318	Cyanide, total	mg/L	L1					< 0.005				0.024
L313	Fecal Coliform	/100mL	L1	< 10	< 10	< 10				< 10		
L315	Fecal Coliform	/100mL	L1				< 10				< 10	
L317	Fecal Coliform	/100mL	L1	< 10	< 10				< 10			
L318	Fecal Coliform	/100mL	L1					< 10				< 10
L313	Fluoride, total	mg/L	L1	0.99	1.1	1.2				1.3		
L315	Fluoride, total	mg/L	L1				0.32				< 2.5	
L317	Fluoride, total	mg/L	L1	1.6	1.6				1.2			
L318	Fluoride, total	mg/L	L1					1.4				< 2.5
L313	Iron, total	ug/L	L1	5.6	4.6	2.9				20		
L315	Iron, total	ug/L	L1				2.4				1.9	
L317	Iron, total	ug/L	L1	8	3.1				12			
L318	Iron, total	ug/L	L1					5.6				9.6
L313	Lead, total	ug/L	L1	0.023	0.012	0.0044				0.28		
L315	Lead, total	ug/L	L1				0.0026				0.0036	
L317	Lead, total	ug/L	L1	0.012	0.0049				0.039			
L318	Lead, total	ug/L	L1					0.013				0.0074
L313	Magnesium, total	mg/L	L1		20	63				47		
L315	Magnesium, total	mg/L	L1				96				100	
L317	Magnesium, total	mg/L	L1		37				96			
L318	Magnesium, total	mg/L	L1					96				73
L313	Manganese, total	ug/L	L1	0.025	0.014	0.032				0.25		
L315	Manganese, total	ug/L	L1				0.022				0.064	
L317	Manganese, total	ug/L	L1	0.068	0.036				0.11			
L318	Manganese, total	ug/L	L1					0.055				0.065
L313	Mercury, total	ug/L	L1	0.00047	< 0.0004	< 0.0002				0.0007		
L315	Mercury, total	ug/L	L1				0.001				0.00046	
L317	Mercury, total	ug/L	L1	0.00057	< 0.0004				0.0019			
L318	Mercury, total	ug/L	L1					0.00067				0.0012

**Table 7
Northern Unit Leachate Analytical**

**Winnebago Landfill
Permit Renewal Application**

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Nickel, total	ug/L	L1	0.93	0.6	0.44				0.95		
L315	Nickel, total	ug/L	L1				0.12				0.075	
L317	Nickel, total	ug/L	L1	0.35	0.18				0.38			
L318	Nickel, total	ug/L	L1					0.46				0.39
L313	Nitrate as N, total	mg/L	L1		4.9	3.6				< 0.2		
L315	Nitrate as N, total	mg/L	L1				< 0.02				< 0.2	
L317	Nitrate as N, total	mg/L	L1		< 0.02				< 0.5			
L318	Nitrate as N, total	mg/L	L1					< 0.5				< 0.2
L313	Ammonia as N, total	mg/L	L1	4500	4500	2700				3700		
L315	Ammonia as N, total	mg/L	L1				1300				470	
L317	Ammonia as N, total	mg/L	L1	1800	1700				1700			
L318	Ammonia as N, total	mg/L	L1					1900				
L313	pH	s.u.	L1	7.92		7.7				7.92		
L315	pH	s.u.	L1								7.17	
L317	pH	s.u.	L1	7.44								
L318	pH	s.u.	L1					7.65			7.68	8.34
L313	Phosphorus, total	mg/L	L1	24	21	22				20		
L315	Phosphorus, total	mg/L	L1				6.2				4.6	
L317	Phosphorus, total	mg/L	L1	19	10				17			
L318	Phosphorus, total	mg/L	L1					17				21
L313	Potassium, total	mg/L	L1		460	650				1100		
L315	Potassium, total	mg/L	L1				250				100	
L317	Potassium, total	mg/L	L1		230				750			
L318	Potassium, total	mg/L	L1					870				720
L313	Selenium, total	ug/L	L1		0.054	0.064				0.12		
L315	Selenium, total	ug/L	L1				0.026				0.036	
L317	Selenium, total	ug/L	L1		0.022				0.093			
L318	Selenium, total	ug/L	L1					0.15				0.23
L313	Silver, total	ug/L	L1	< 0.01	< 0.01	< 0.005				< 0.005		
L315	Silver, total	ug/L	L1				< 0.005				< 0.005	
L317	Silver, total	ug/L	L1	< 0.01	< 0.01				< 0.005			
L318	Silver, total	ug/L	L1					< 0.005				< 0.005
L313	Sodium, total	mg/L	L1		1600	2600				3500		
L315	Sodium, total	mg/L	L1				860				390	
L317	Sodium, total	mg/L	L1		1000				2600			
L318	Sodium, total	mg/L	L1					3000				2700
L313	Total Dissolved Solids	mg/L	L1	12000	14000	11000				21000		
L315	Total Dissolved Solids	mg/L	L1				4600				2400	
L317	Total Dissolved Solids	mg/L	L1	7300	8300				11000			
L318	Total Dissolved Solids	mg/L	L1					11000				12000
L313	Total Suspended Solids	mg/L	L1	12	76	19				1600		
L315	Total Suspended Solids	mg/L	L1				21				22	
L317	Total Suspended Solids	mg/L	L1	74	41				59			
L318	Total Suspended Solids	mg/L	L1					62				39
L313	Specific Conductance	umhos/cm	L1	7810		4350				15830		
L315	Specific Conductance	umhos/cm	L1								6140	
L317	Specific Conductance	umhos/cm	L1	8530								
L318	Specific Conductance	umhos/cm	L1					18000			6860	19000

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Sulfate, total	mg/L	L1		2.7	36				9		
L315	Sulfate, total	mg/L	L1				3.4				< 10	
L317	Sulfate, total	mg/L	L1		< 5				19			
L318	Sulfate, total	mg/L	L1					2.6				< 10
L313	Thallium, total	ug/L	L1		< 0.002	< 0.001				< 0.001		
L315	Thallium, total	ug/L	L1				< 0.001				< 0.001	
L317	Thallium, total	ug/L	L1		< 0.002				< 0.001			
L318	Thallium, total	ug/L	L1					0.0014				< 0.001
L313	Tin, total	ug/L	L1		0.093	0.094				0.37		
L315	Tin, total	ug/L	L1				< 0.06				< 0.06	
L317	Tin, total	ug/L	L1		< 0.06				0.19			
L318	Tin, total	ug/L	L1					250				< 0.06
L313	Vanadium, total	ug/L	L1		0.063					0.092		
L315	Vanadium, total	ug/L	L1				0.032				0.0054	
L317	Vanadium, total	ug/L	L1		0.035				0.1			
L318	Vanadium, total	ug/L	L1					0.062				0.073
L313	Zinc, total	ug/L	L1	0.13	0.032	0.036				99		
L315	Zinc, total	ug/L	L1				0.058				0.026	
L317	Zinc, total	ug/L	L1	0.26	0.079				0.45			
L318	Zinc, total	ug/L	L1					0.13				0.067
L313	1,1,1,2-Tetrachloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,1,1,2-Tetrachloroethane	ug/L	L1								< 50	
L317	1,1,1,2-Tetrachloroethane	ug/L	L1		< 200				P< 1			
L318	1,1,1,2-Tetrachloroethane	ug/L	L1					< 1				< 50
L313	1,1,1-Trichloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,1,1-Trichloroethane	ug/L	L1								< 50	
L317	1,1,1-Trichloroethane	ug/L	L1		< 200				P< 1			
L318	1,1,1-Trichloroethane	ug/L	L1					< 1				< 50
L313	1,1,2,2-Tetrachloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,1,2,2-Tetrachloroethane	ug/L	L1								< 50	
L317	1,1,2,2-Tetrachloroethane	ug/L	L1		< 200				P< 1			
L318	1,1,2,2-Tetrachloroethane	ug/L	L1					< 1				< 50
L313	1,1,2-Trichloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,1,2-Trichloroethane	ug/L	L1								< 50	
L317	1,1,2-Trichloroethane	ug/L	L1		< 200				P< 1			
L318	1,1,2-Trichloroethane	ug/L	L1					< 1				< 50
L313	1,1-Dichloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,1-Dichloroethane	ug/L	L1								< 50	
L317	1,1-Dichloroethane	ug/L	L1		< 200				P< 1			
L318	1,1-Dichloroethane	ug/L	L1					< 1				< 50
L313	1,1-Dichloroethene	ug/L	L1		< 200	< 1				< 5		
L315	1,1-Dichloroethene	ug/L	L1								< 50	
L317	1,1-Dichloroethene	ug/L	L1		< 200				P< 1			
L318	1,1-Dichloroethene	ug/L	L1					< 1				< 50
L313	1,1-Dichloropropene	ug/L	L1		< 200	< 1				< 5		
L315	1,1-Dichloropropene	ug/L	L1								< 50	
L317	1,1-Dichloropropene	ug/L	L1		< 200				P< 1			
L318	1,1-Dichloropropene	ug/L	L1					< 1				< 50

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	1,2,3-Trichlorobenzene	ug/L	L1		< 200	< 1				< 5		
L315	1,2,3-Trichlorobenzene	ug/L	L1								< 50	
L317	1,2,3-Trichlorobenzene	ug/L	L1		< 200				P< 1			
L318	1,2,3-Trichlorobenzene	ug/L	L1					< 1				< 50
L313	1,2,3-Trichloropropane	ug/L	L1		< 200	< 1				< 5		
L315	1,2,3-Trichloropropane	ug/L	L1				< 5				< 50	
L317	1,2,3-Trichloropropane	ug/L	L1		< 200				P< 1			
L318	1,2,3-Trichloropropane	ug/L	L1					< 1				< 50
L313	1,2,4-Trichlorobenzene	ug/L	L1		< 200	< 1				< 5		
L315	1,2,4-Trichlorobenzene	ug/L	L1				< 5				< 50	
L317	1,2,4-Trichlorobenzene	ug/L	L1		< 200				P< 1			
L318	1,2,4-Trichlorobenzene	ug/L	L1					< 1				< 50
L313	1,2,4-Trimethylbenzene	ug/L	L1		< 200	24				66		
L315	1,2,4-Trimethylbenzene	ug/L	L1				14				< 50	
L317	1,2,4-Trimethylbenzene	ug/L	L1		< 200				P 39			
L318	1,2,4-Trimethylbenzene	ug/L	L1					38				< 50
L313	1,2-Dibromo-3-chloropropane	ug/L	L1		< 200	< 1				< 25		
L315	1,2-Dibromo-3-chloropropane	ug/L	L1				< 25				< 10	
L317	1,2-Dibromo-3-chloropropane	ug/L	L1		< 200				P< 5			
L318	1,2-Dibromo-3-chloropropane	ug/L	L1					< 5				< 10
L313	1,2-Dibromoethane	ug/L	L1		< 200	< 1				< 25		
L315	1,2-Dibromoethane	ug/L	L1								< 10	
L317	1,2-Dibromoethane	ug/L	L1		< 200				P< 5			
L318	1,2-Dibromoethane	ug/L	L1					< 5				< 10
L313	1,2-Dichlorobenzene	ug/L	L1		< 200	< 1				< 5		
L315	1,2-Dichlorobenzene	ug/L	L1				< 5				< 50	
L317	1,2-Dichlorobenzene	ug/L	L1		< 200				P 3.8			
L318	1,2-Dichlorobenzene	ug/L	L1					2.8				< 50
L313	1,2-Dichloroethane	ug/L	L1		< 200	< 1				< 5		
L315	1,2-Dichloroethane	ug/L	L1				< 5				< 50	
L317	1,2-Dichloroethane	ug/L	L1		< 200				P< 1			
L318	1,2-Dichloroethane	ug/L	L1					< 1				< 50
L313	1,2-Dichloropropane	ug/L	L1		< 200	< 1				< 5		
L315	1,2-Dichloropropane	ug/L	L1				< 5				< 50	
L317	1,2-Dichloropropane	ug/L	L1		< 200				P< 1			
L318	1,2-Dichloropropane	ug/L	L1					< 1				< 50
L313	1,3,5-Trimethylbenzene	ug/L	L1		< 200	8.8				25		
L315	1,3,5-Trimethylbenzene	ug/L	L1				< 5				< 50	
L317	1,3,5-Trimethylbenzene	ug/L	L1		< 200				P 11			
L318	1,3,5-Trimethylbenzene	ug/L	L1					11				< 50
L313	1,3-Dichlorobenzene	ug/L	L1		< 200	< 1				< 5		
L315	1,3-Dichlorobenzene	ug/L	L1				< 5				< 50	
L317	1,3-Dichlorobenzene	ug/L	L1		< 200				P< 1			
L318	1,3-Dichlorobenzene	ug/L	L1					< 1				< 50
L313	1,3-Dichloropropane	ug/L	L1		< 200	< 1				< 5		
L315	1,3-Dichloropropane	ug/L	L1				< 5				< 50	
L317	1,3-Dichloropropane	ug/L	L1		< 200				P< 1			
L318	1,3-Dichloropropane	ug/L	L1					< 1				< 50

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	1,3-Dichloropropene	ug/L	L1		< 400	< 2				< 10		
L315	1,3-Dichloropropene	ug/L	L1				< 10				< 50	
L317	1,3-Dichloropropene	ug/L	L1		< 400				P< 2			
L318	1,3-Dichloropropene	ug/L	L1					< 2				< 200
L313	1,4-Dichlorobenzene	ug/L	L1		< 200	8.5				C 12		
L315	1,4-Dichlorobenzene	ug/L	L1				10				< 50	
L317	1,4-Dichlorobenzene	ug/L	L1		< 200				P 23			
L318	1,4-Dichlorobenzene	ug/L	L1					16				< 50
L313	1-Propanol	ug/L	L1		< 200000	< 1000				< 5000		
L315	1-Propanol	ug/L	L1				< 5000				< 10000	
L317	1-Propanol	ug/L	L1		< 200000				P< 1000			
L318	1-Propanol	ug/L	L1					< 1000				< 10000
L313	2,2-Dichloropropane	ug/L	L1		< 200	< 1				< 5		
L315	2,2-Dichloropropane	ug/L	L1				< 5				< 50	
L317	2,2-Dichloropropane	ug/L	L1		< 200				P< 1			
L318	2,2-Dichloropropane	ug/L	L1					< 1				< 50
L313	2,4,6-Trichlorophenol	ug/L	L1		< 100	< 100				< 100		
L315	2,4,6-Trichlorophenol	ug/L	L1				< 100				< 500	
L317	2,4,6-Trichlorophenol	ug/L	L1		< 100				< 100			
L318	2,4,6-Trichlorophenol	ug/L	L1					< 100				< 500
L313	2,4-D	ug/L	L1		3.6	T< 1				Q< 1		
L315	2,4-D	ug/L	L1				< 0.1				< 1	
L317	2,4-D	ug/L	L1		< 0.1				< 1			
L318	2,4-D	ug/L	L1					< 1				< 1
L313	2,4-Dichlorophenol	ug/L	L1		< 100	< 100				< 100		
L315	2,4-Dichlorophenol	ug/L	L1				< 100				< 100	
L317	2,4-Dichlorophenol	ug/L	L1		< 100				< 100			
L318	2,4-Dichlorophenol	ug/L	L1					< 100				< 100
L313	2,4-Dimethylphenol	ug/L	L1		< 100	< 100				< 100		
L315	2,4-Dimethylphenol	ug/L	L1				< 100				< 100	
L317	2,4-Dimethylphenol	ug/L	L1		< 100				< 100			
L318	2,4-Dimethylphenol	ug/L	L1					< 100				< 100
L313	2,4-Dinitrophenol	ug/L	L1		< 500	< 500				< 500		
L315	2,4-Dinitrophenol	ug/L	L1				< 500				< 500	
L317	2,4-Dinitrophenol	ug/L	L1		< 500				< 500			
L318	2,4-Dinitrophenol	ug/L	L1					< 500				< 500
L313	2,4-Dinitrotoluene	ug/L	L1		< 100	< 100				< 100		
L315	2,4-Dinitrotoluene	ug/L	L1				< 100				< 100	
L317	2,4-Dinitrotoluene	ug/L	L1		< 100				< 100			
L318	2,4-Dinitrotoluene	ug/L	L1					< 100				< 100
L313	2,6-Dinitrotoluene	ug/L	L1		< 100	< 100				< 100		
L315	2,6-Dinitrotoluene	ug/L	L1				< 100				< 100	
L317	2,6-Dinitrotoluene	ug/L	L1		< 100				< 100			
L318	2,6-Dinitrotoluene	ug/L	L1					< 100				< 100
L313	2-Butanone	ug/L	L1		< 1000	25				H 1100		
L315	2-Butanone	ug/L	L1				< 25				< 100	
L317	2-Butanone	ug/L	L1		< 1000				P 19			
L318	2-Butanone	ug/L	L1					24				< 100

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	2-Chloroethyl vinyl ether	ug/L	L1			< 10				< 50		
L315	2-Chloroethyl vinyl ether	ug/L	L1								< 50	
L317	2-Chloroethyl vinyl ether	ug/L	L1						< 10			
L318	2-Chloroethyl vinyl ether	ug/L	L1					< 10				< 50
L313	2-Chloronaphthalene	ug/L	L1		< 100	< 100				< 100		
L315	2-Chloronaphthalene	ug/L	L1				< 100				< 100	
L317	2-Chloronaphthalene	ug/L	L1		< 100				< 100			
L318	2-Chloronaphthalene	ug/L	L1					< 100				< 100
L313	2-Chlorophenol	ug/L	L1		< 100	< 100				< 100		
L315	2-Chlorophenol	ug/L	L1				< 100				< 100	
L317	2-Chlorophenol	ug/L	L1		< 100				< 100			
L318	2-Chlorophenol	ug/L	L1					< 100				< 100
L313	2-Chlorotoluene	ug/L	L1		< 200	< 1				< 5		
L315	2-Chlorotoluene	ug/L	L1				< 5				< 50	
L317	2-Chlorotoluene	ug/L	L1		< 200				P< 1			
L318	2-Chlorotoluene	ug/L	L1					< 1				< 50
L313	2-Hexanone	ug/L	L1		< 1000	< 5				99		
L315	2-Hexanone	ug/L	L1				< 25				< 100	
L317	2-Hexanone	ug/L	L1		< 1000				P< 5			
L318	2-Hexanone	ug/L	L1					< 5				< 100
L313	2-Nitrophenol	ug/L	L1		< 100	< 100				< 100		
L315	2-Nitrophenol	ug/L	L1				< 100				< 100	
L317	2-Nitrophenol	ug/L	L1		< 100				< 100			
L318	2-Nitrophenol	ug/L	L1					< 100				< 100
L313	2-Propanol	ug/L	L1			< 1000				< 5000		
L315	2-Propanol	ug/L	L1				< 5000				< 10000	
L317	2-Propanol	ug/L	L1						P< 1000			
L318	2-Propanol	ug/L	L1					< 1000				< 10000
L313	3,3'-Dichlorobenzidine	ug/L	L1		< 200	< 200				< 200		
L315	3,3'-Dichlorobenzidine	ug/L	L1				< 200				< 200	
L317	3,3'-Dichlorobenzidine	ug/L	L1		< 200				< 200			
L318	3,3'-Dichlorobenzidine	ug/L	L1					< 200				< 200
L313	4,4'-DDD	ug/L	L1		< 1	< 1				X< 1		
L315	4,4'-DDD	ug/L	L1				Q< 1				< 1	
L317	4,4'-DDD	ug/L	L1		< 1				T< 0.1			
L318	4,4'-DDD	ug/L	L1					< 1				< 1
L313	4,4'-DDE	ug/L	L1		< 1	< 1				X< 1		
L315	4,4'-DDE	ug/L	L1				Q< 1				< 1	
L317	4,4'-DDE	ug/L	L1		< 1				T< 0.1			
L318	4,4'-DDE	ug/L	L1					< 1				< 1
L313	4,4'-DDT	ug/L	L1		< 1	< 1				X< 1		
L315	4,4'-DDT	ug/L	L1				< 1				< 1	
L317	4,4'-DDT	ug/L	L1		< 1				T< 0.1			
L318	4,4'-DDT	ug/L	L1					< 1				< 1
L313	4,6-Dinitro-2-methylphenol	ug/L	L1		< 500	< 500				< 500		
L315	4,6-Dinitro-2-methylphenol	ug/L	L1				< 500				< 500	
L317	4,6-Dinitro-2-methylphenol	ug/L	L1		< 500				< 500			
L318	4,6-Dinitro-2-methylphenol	ug/L	L1					< 500				< 500

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	4-Bromophenyl-phenylether	ug/L	L1		< 100	< 100				< 100		
L315	4-Bromophenyl-phenylether	ug/L	L1				< 100				< 100	
L317	4-Bromophenyl-phenylether	ug/L	L1		< 100				< 100			
L318	4-Bromophenyl-phenylether	ug/L	L1					< 100				< 100
L313	4-Chlorophenyl-phenyl Ether	ug/L	L1		< 100	< 100				< 100		
L315	4-Chlorophenyl-phenyl Ether	ug/L	L1				< 100				< 100	
L317	4-Chlorophenyl-phenyl Ether	ug/L	L1		< 100				< 100			
L318	4-Chlorophenyl-phenyl Ether	ug/L	L1					< 100				< 100
L313	4-Chlorotoluene	ug/L	L1		< 200	< 1				< 5		
L315	4-Chlorotoluene	ug/L	L1				< 5				< 50	
L317	4-Chlorotoluene	ug/L	L1		< 200				P< 1			
L318	4-Chlorotoluene	ug/L	L1					< 1				< 50
L313	4-Methyl-2-pentanone	ug/L	L1		< 1000	9.6				52		
L315	4-Methyl-2-pentanone	ug/L	L1				26				< 100	
L317	4-Methyl-2-pentanone	ug/L	L1		< 1000				P< 5			
L318	4-Methyl-2-pentanone	ug/L	L1					< 5				< 100
L313	4-Methylphenol	ug/L	L1		180	< 100				3100		
L315	4-Methylphenol	ug/L	L1				< 100				< 100	
L317	4-Methylphenol	ug/L	L1		720				< 100			
L318	4-Methylphenol	ug/L	L1					< 100				< 100
L313	4-Nitrophenol	ug/L	L1		< 100	< 100				< 100		
L315	4-Nitrophenol	ug/L	L1				< 100				< 500	
L317	4-Nitrophenol	ug/L	L1		< 100				< 100			
L318	4-Nitrophenol	ug/L	L1					< 100				< 500
L313	Acenaphthene	ug/L	L1		< 100	< 100				< 100		
L315	Acenaphthene	ug/L	L1				< 100				< 100	
L317	Acenaphthene	ug/L	L1		< 100				< 100			
L318	Acenaphthene	ug/L	L1					< 100				< 100
L313	Acetone	ug/L	L1		2800	66				H 1600		
L315	Acetone	ug/L	L1				95				< 100	
L317	Acetone	ug/L	L1		< 2000				P 28			
L318	Acetone	ug/L	L1					35				< 100
L313	Alachlor	ug/L	L1		< 4	< 4				< 4		
L315	Alachlor	ug/L	L1				< 0.4				< 4	
L317	Alachlor	ug/L	L1		< 4				< 4			
L318	Alachlor	ug/L	L1					< 0.4				< 4
L313	Aldicarb	ug/L	L1		22	6.8				< 4		
L315	Aldicarb	ug/L	L1				< 0.4				< 2	
L317	Aldicarb	ug/L	L1		< 20				< 4			
L318	Aldicarb	ug/L	L1					19				< 2
L313	Aldrin	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	Aldrin	ug/L	L1				Q< 0.5				< 0.5	
L317	Aldrin	ug/L	L1		< 0.5				T< 0.05			
L318	Aldrin	ug/L	L1					< 0.5				< 0.5
L313	alpha-BHC	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	alpha-BHC	ug/L	L1				Q< 0.5				< 0.5	
L317	alpha-BHC	ug/L	L1		< 0.5				T< 0.05			
L318	alpha-BHC	ug/L	L1					< 0.5				< 0.5

**Table 7
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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Anthracene	ug/L	L1		< 100	< 100				< 100		
L315	Anthracene	ug/L	L1				< 100				< 100	
L317	Anthracene	ug/L	L1		< 100				< 100			
L318	Anthracene	ug/L	L1					< 100				< 100
L313	Atrazine	ug/L	L1		< 2	< 2				< 2		
L315	Atrazine	ug/L	L1				< 0.2				< 2	
L317	Atrazine	ug/L	L1		< 2				< 2			
L318	Atrazine	ug/L	L1					< 0.2				< 2
L313	Benzene	ug/L	L1		< 200	4.8				7.2		
L315	Benzene	ug/L	L1				< 5				< 50	
L317	Benzene	ug/L	L1		< 200				P 4.4			
L318	Benzene	ug/L	L1					3.7				< 50
L313	Benzo(a)anthracene	ug/L	L1		< 100	< 100				< 100		
L315	Benzo(a)anthracene	ug/L	L1				< 100				< 100	
L317	Benzo(a)anthracene	ug/L	L1		< 100				< 100			
L318	Benzo(a)anthracene	ug/L	L1					< 100				< 100
L313	Benzo(a)pyrene	ug/L	L1		F< 100	< 100				< 100		
L315	Benzo(a)pyrene	ug/L	L1				< 100				< 100	
L317	Benzo(a)pyrene	ug/L	L1		F< 100				< 100			
L318	Benzo(a)pyrene	ug/L	L1					< 100				< 100
L313	Benzo(b)fluoranthene	ug/L	L1		F< 100	< 100				< 100		
L315	Benzo(b)fluoranthene	ug/L	L1				< 100				< 100	
L317	Benzo(b)fluoranthene	ug/L	L1		F< 100				< 100			
L318	Benzo(b)fluoranthene	ug/L	L1					< 100				< 100
L313	Benzo(g,h,i)perylene	ug/L	L1		F< 100	< 100				< 100		
L315	Benzo(g,h,i)perylene	ug/L	L1				< 100				< 100	
L317	Benzo(g,h,i)perylene	ug/L	L1		F< 100				< 100			
L318	Benzo(g,h,i)perylene	ug/L	L1					< 100				< 100
L313	Benzo(k)fluoranthene	ug/L	L1		F< 100	< 100				< 100		
L315	Benzo(k)fluoranthene	ug/L	L1				< 100				< 100	
L317	Benzo(k)fluoranthene	ug/L	L1		F< 100				< 100			
L318	Benzo(k)fluoranthene	ug/L	L1					< 100				< 100
L313	beta-BHC	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	beta-BHC	ug/L	L1				< 0.5				< 0.5	
L317	beta-BHC	ug/L	L1		< 0.05				T< 0.05			
L318	beta-BHC	ug/L	L1					< 0.5				< 0.5
L313	bis(2-Chloroethoxy)methane	ug/L	L1		< 100	< 100				< 100		
L315	bis(2-Chloroethoxy)methane	ug/L	L1				< 100				< 100	
L317	bis(2-Chloroethoxy)methane	ug/L	L1		< 100				< 100			
L318	bis(2-Chloroethoxy)methane	ug/L	L1					< 100				< 100
L313	bis(2-Chloroethyl) Ether	ug/L	L1		< 100	< 100				< 100		
L315	bis(2-Chloroethyl) Ether	ug/L	L1				< 100				< 100	
L317	bis(2-Chloroethyl) Ether	ug/L	L1		< 100				< 100			
L318	bis(2-Chloroethyl) Ether	ug/L	L1					< 100				< 100
L313	bis(2-Chloroisopropyl) Ether	ug/L	L1		< 100	< 100				< 100		
L315	bis(2-Chloroisopropyl) Ether	ug/L	L1				< 100				< 100	
L317	bis(2-Chloroisopropyl) Ether	ug/L	L1		< 100				< 100			
L318	bis(2-Chloroisopropyl) Ether	ug/L	L1					< 100				< 100

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	bis(2-Ethylhexyl)phthalate	ug/L	L1		440	< 100				< 100		
L315	bis(2-Ethylhexyl)phthalate	ug/L	L1				< 100				< 100	
L317	bis(2-Ethylhexyl)phthalate	ug/L	L1		1200				< 100			
L318	bis(2-Ethylhexyl)phthalate	ug/L	L1					< 100				< 100
L313	bis(Chloromethyl) ether	ug/L	L1		< 2000000					< 50000		
L315	bis(Chloromethyl) ether	ug/L	L1				< 50000				< 100000	
L317	bis(Chloromethyl) ether	ug/L	L1		< 2000000				P< 10000			
L318	bis(Chloromethyl) ether	ug/L	L1					< 10000				< 100000
L313	Bromobenzene	ug/L	L1		< 200	< 1				< 5		
L315	Bromobenzene	ug/L	L1				< 5				< 50	
L317	Bromobenzene	ug/L	L1		< 200				P< 1			
L318	Bromobenzene	ug/L	L1					< 1				< 50
L313	Bromochloromethane	ug/L	L1		< 200	< 1				< 5		
L315	Bromochloromethane	ug/L	L1				< 5				< 50	
L317	Bromochloromethane	ug/L	L1		< 200				P< 1			
L318	Bromochloromethane	ug/L	L1					< 1				< 50
L313	Bromodichloromethane	ug/L	L1		< 200	< 1				< 5		
L315	Bromodichloromethane	ug/L	L1				< 5				< 50	
L317	Bromodichloromethane	ug/L	L1		< 200				P< 1			
L318	Bromodichloromethane	ug/L	L1					< 1				< 50
L313	Bromoform	ug/L	L1		< 200	< 1				< 5		
L315	Bromoform	ug/L	L1				< 5				< 50	
L317	Bromoform	ug/L	L1		< 200				P< 1			
L318	Bromoform	ug/L	L1					< 1				< 50
L313	Bromomethane	ug/L	L1		< 400	< 2				< 10		
L315	Bromomethane	ug/L	L1				< 10				< 50	
L317	Bromomethane	ug/L	L1		< 400				P< 2			
L318	Bromomethane	ug/L	L1					< 2				< 50
L313	Butylbenzylphthalate	ug/L	L1		< 100	< 100				< 100		
L315	Butylbenzylphthalate	ug/L	L1				< 100				< 100	
L317	Butylbenzylphthalate	ug/L	L1		< 100				< 100			
L318	Butylbenzylphthalate	ug/L	L1					< 100				< 100
L313	Carbofuran	ug/L	L1		< 15	< 15				< 15		
L315	Carbofuran	ug/L	L1				< 1.5				< 2	
L317	Carbofuran	ug/L	L1		< 15				< 15			
L318	Carbofuran	ug/L	L1					< 1.5				< 2
L313	Carbon Disulfide	ug/L	L1		< 200	< 1				< 5		
L315	Carbon Disulfide	ug/L	L1				< 5				< 50	
L317	Carbon Disulfide	ug/L	L1		< 200				P 2			
L318	Carbon Disulfide	ug/L	L1					< 1				< 50
L313	Carbon Tetrachloride	ug/L	L1		< 200	< 1				< 5		
L315	Carbon Tetrachloride	ug/L	L1				< 5				< 50	
L317	Carbon Tetrachloride	ug/L	L1		< 200				P< 1			
L318	Carbon Tetrachloride	ug/L	L1					< 1				< 50
L313	Chlordane	ug/L	L1		< 5	< 5				X< 5		
L315	Chlordane	ug/L	L1				< 5				< 5	
L317	Chlordane	ug/L	L1		< 5				T< 0.5			
L318	Chlordane	ug/L	L1					< 5				< 5

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Chlorobenzene	ug/L	L1		< 200	4.2				< 5		
L315	Chlorobenzene	ug/L	L1				< 5				< 50	
L317	Chlorobenzene	ug/L	L1		< 200				P 1.9			
L318	Chlorobenzene	ug/L	L1					1.5				< 50
L313	Chloroethane	ug/L	L1		< 400	< 2				< 10		
L315	Chloroethane	ug/L	L1				< 10				< 50	
L317	Chloroethane	ug/L	L1		< 400				P< 2			
L318	Chloroethane	ug/L	L1					< 2				< 50
L313	Chloroform	ug/L	L1		< 200	< 1				< 5		
L315	Chloroform	ug/L	L1				< 5				< 50	
L317	Chloroform	ug/L	L1		< 200				P< 1			
L318	Chloroform	ug/L	L1					< 1				< 50
L313	Chloromethane	ug/L	L1		< 400	< 2				< 10		
L315	Chloromethane	ug/L	L1				< 10				< 50	
L317	Chloromethane	ug/L	L1		< 400				P< 2			
L318	Chloromethane	ug/L	L1					< 2				< 50
L313	Chrysene	ug/L	L1		< 100	< 100				< 100		
L315	Chrysene	ug/L	L1				< 100				< 100	
L317	Chrysene	ug/L	L1		< 100				< 100			
L318	Chrysene	ug/L	L1					< 100				< 100
L313	cis-1,2-Dichloroethene	ug/L	L1		< 200	3.2				11		
L315	cis-1,2-Dichloroethene	ug/L	L1				< 5				< 200	
L317	cis-1,2-Dichloroethene	ug/L	L1		< 200				P 22			
L318	cis-1,2-Dichloroethene	ug/L	L1					13				< 200
L313	delta-BHC	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	delta-BHC	ug/L	L1				< 0.5				< 0.5	
L317	delta-BHC	ug/L	L1		< 0.5				T< 0.05			
L318	delta-BHC	ug/L	L1					< 0.5				< 0.5
L313	Dibenzo(a,h)anthracene	ug/L	L1		F< 100	< 100				< 100		
L315	Dibenzo(a,h)anthracene	ug/L	L1				< 100				< 100	
L317	Dibenzo(a,h)anthracene	ug/L	L1		F< 100				< 100			
L318	Dibenzo(a,h)anthracene	ug/L	L1					< 100				< 100
L313	Dibromochloromethane	ug/L	L1		< 200	< 1				< 5		
L315	Dibromochloromethane	ug/L	L1				< 5				< 50	
L317	Dibromochloromethane	ug/L	L1		< 200				P< 1			
L318	Dibromochloromethane	ug/L	L1					< 1				< 50
L313	Dibromomethane	ug/L	L1		< 200	< 1				< 5		
L315	Dibromomethane	ug/L	L1				< 5				< 50	
L317	Dibromomethane	ug/L	L1		< 200				P< 1			
L318	Dibromomethane	ug/L	L1					< 1				< 50
L313	Dichlorodifluoromethane	ug/L	L1		< 400	< 2				< 10		
L315	Dichlorodifluoromethane	ug/L	L1				< 10				< 50	
L317	Dichlorodifluoromethane	ug/L	L1		< 400				P< 2			
L318	Dichlorodifluoromethane	ug/L	L1					< 2				< 50
L313	Dieldrin	ug/L	L1		< 1	< 1				X< 1		
L315	Dieldrin	ug/L	L1				< 1				< 1	
L317	Dieldrin	ug/L	L1		< 1				T< 0.1			
L318	Dieldrin	ug/L	L1					< 1				< 1

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Diethylphthalate	ug/L	L1		< 100	< 100				< 100		
L315	Diethylphthalate	ug/L	L1				< 100				< 100	
L317	Diethylphthalate	ug/L	L1		< 100				< 100			
L318	Diethylphthalate	ug/L	L1					< 100				< 100
L313	Dimethylphthalate	ug/L	L1		< 100	< 100				< 100		
L315	Dimethylphthalate	ug/L	L1				< 100				< 100	
L317	Dimethylphthalate	ug/L	L1		< 100				< 100			
L318	Dimethylphthalate	ug/L	L1					< 100				< 100
L313	Di-n-butylphthalate	ug/L	L1		< 100	< 100				< 100		
L315	Di-n-butylphthalate	ug/L	L1				< 100				< 100	
L317	Di-n-butylphthalate	ug/L	L1		< 100				< 100			
L318	Di-n-butylphthalate	ug/L	L1					< 100				< 100
L313	Di-n-octylphthalate	ug/L	L1		< 100	< 100				< 100		
L315	Di-n-octylphthalate	ug/L	L1				< 100				< 100	
L317	Di-n-octylphthalate	ug/L	L1		< 100				< 100			
L318	Di-n-octylphthalate	ug/L	L1					< 100				< 100
L313	Dioxin Screen	ug/L	L1		< 100	< 100				< 100		
L315	Dioxin Screen	ug/L	L1				< 100				< 500	
L317	Dioxin Screen	ug/L	L1		< 100				< 100			
L318	Dioxin Screen	ug/L	L1					< 100				< 500
L313	Endosulfan I	ug/L	L1		< 0.5	< 0.5				X 0.83		
L315	Endosulfan I	ug/L	L1				< 0.5				< 1	
L317	Endosulfan I	ug/L	L1		< 0.5				T< 0.05			
L318	Endosulfan I	ug/L	L1					< 0.5				< 1
L313	Endosulfan II	ug/L	L1		< 1	< 1				X< 1		
L315	Endosulfan II	ug/L	L1				< 1				< 1	
L317	Endosulfan II	ug/L	L1		< 1				T< 0.1			
L318	Endosulfan II	ug/L	L1					< 1				< 1
L313	Endosulfan Sulfate	ug/L	L1		< 1	< 1				X< 1		
L315	Endosulfan Sulfate	ug/L	L1				< 1				< 1	
L317	Endosulfan Sulfate	ug/L	L1		< 1				T< 0.1			
L318	Endosulfan Sulfate	ug/L	L1					< 1				< 1
L313	Endrin	ug/L	L1		< 1	< 1				X< 1		
L315	Endrin	ug/L	L1				< 1				< 1	
L317	Endrin	ug/L	L1		< 1				T< 0.1			
L318	Endrin	ug/L	L1					< 1				< 1
L313	Endrin Aldehyde	ug/L	L1		< 1	< 1				X< 1		
L315	Endrin Aldehyde	ug/L	L1				Q< 1				< 1	
L317	Endrin Aldehyde	ug/L	L1		< 1				T< 0.1			
L318	Endrin Aldehyde	ug/L	L1					< 1				< 1
L313	Ethyl Acetate	ug/L	L1		< 2000	< 10				< 50		
L315	Ethyl Acetate	ug/L	L1				< 50				< 50	
L317	Ethyl Acetate	ug/L	L1		< 2000				P< 10			
L318	Ethyl Acetate	ug/L	L1					< 10				< 50
L313	Ethylbenzene	ug/L	L1		< 200	86				C 47		
L315	Ethylbenzene	ug/L	L1				19				< 50	
L317	Ethylbenzene	ug/L	L1		< 200				P 61			
L318	Ethylbenzene	ug/L	L1					51				74

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Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Fluoranthene	ug/L	L1		120	< 100				< 100		
L315	Fluoranthene	ug/L	L1				< 100				< 100	
L317	Fluoranthene	ug/L	L1		< 100				< 100			
L318	Fluoranthene	ug/L	L1					< 100				< 100
L313	Fluorene	ug/L	L1		< 100	< 100				< 100		
L315	Fluorene	ug/L	L1				< 100				< 100	
L317	Fluorene	ug/L	L1		< 100				< 100			
L318	Fluorene	ug/L	L1					< 100				< 100
L313	gamma-BHC (Lindane)	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	gamma-BHC (Lindane)	ug/L	L1				< 0.5				< 0.5	
L317	gamma-BHC (Lindane)	ug/L	L1		< 0.5				T< 0.05			
L318	gamma-BHC (Lindane)	ug/L	L1					< 0.5				< 0.5
L313	Heptachlor	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	Heptachlor	ug/L	L1				Q< 0.5				< 0.5	
L317	Heptachlor	ug/L	L1		< 0.05				T< 0.05			
L318	Heptachlor	ug/L	L1					< 0.5				< 0.5
L313	Heptachlor Epoxide	ug/L	L1		< 0.5	< 0.5				X< 0.5		
L315	Heptachlor Epoxide	ug/L	L1				< 0.5				< 0.5	
L317	Heptachlor Epoxide	ug/L	L1		< 0.5				T< 0.05			
L318	Heptachlor Epoxide	ug/L	L1					< 0.5				< 0.5
L313	Hexachlorobenzene	ug/L	L1		< 100	< 100				< 100		
L315	Hexachlorobenzene	ug/L	L1				< 100				< 100	
L317	Hexachlorobenzene	ug/L	L1		< 100				< 100			
L318	Hexachlorobenzene	ug/L	L1					< 100				< 100
L313	Hexachlorobutadiene	ug/L	L1		< 100	< 100				< 100		
L315	Hexachlorobutadiene	ug/L	L1				< 100				< 100	
L317	Hexachlorobutadiene	ug/L	L1		< 100				< 100			
L318	Hexachlorobutadiene	ug/L	L1					< 100				< 100
L313	Hexachlorocyclopentadiene	ug/L	L1		< 100	< 100				Q,R< 100		
L315	Hexachlorocyclopentadiene	ug/L	L1				< 100				< 100	
L317	Hexachlorocyclopentadiene	ug/L	L1		< 100				< 100			
L318	Hexachlorocyclopentadiene	ug/L	L1					< 100				< 100
L313	Hexachloroethane	ug/L	L1		< 100	< 100				< 100		
L315	Hexachloroethane	ug/L	L1				< 100				< 100	
L317	Hexachloroethane	ug/L	L1		< 100				< 100			
L318	Hexachloroethane	ug/L	L1					< 100				< 100
L313	Hexane Ext. Material (HEM) by SPE	mg/L	L1	<P 17	P 21	< 5				P 30		
L315	Hexane Ext. Material (HEM) by SPE	mg/L	L1				P< 6				< 5	
L317	Hexane Ext. Material (HEM) by SPE	mg/L	L1	P 48	P 38				33			
L318	Hexane Ext. Material (HEM) by SPE	mg/L	L1					P 9.9				< 18
L313	Indeno(1,2,3-cd)pyrene	ug/L	L1		F< 100	< 100				< 100		
L315	Indeno(1,2,3-cd)pyrene	ug/L	L1				< 100				< 100	
L317	Indeno(1,2,3-cd)pyrene	ug/L	L1		F< 100				< 100			
L318	Indeno(1,2,3-cd)pyrene	ug/L	L1					< 100				< 100
L313	Iodomethane	ug/L	L1		< 200	< 1				< 5		
L315	Iodomethane	ug/L	L1				< 5				< 50	
L317	Iodomethane	ug/L	L1		< 200				P< 1			
L318	Iodomethane	ug/L	L1					< 1				< 50

Table 7
Northern Unit Leachate Analytical

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Isopropylbenzene	ug/L	L1		< 200	2.9				7.4		
L315	Isopropylbenzene	ug/L	L1				< 5				< 50	
L317	Isopropylbenzene	ug/L	L1		< 200				P 5.4			
L318	Isopropylbenzene	ug/L	L1					4				< 50
L313	m,p-Xylene	ug/L	L1		< 200	120				82		
L315	m,p-Xylene	ug/L	L1				35				< 50	
L317	m,p-Xylene	ug/L	L1		< 200				P 130			
L318	m,p-Xylene	ug/L	L1					110				180
L313	Methoxychlor	ug/L	L1		< 5	< 5				X< 5		
L315	Methoxychlor	ug/L	L1				< 5				< 5	
L317	Methoxychlor	ug/L	L1		< 5				T< 0.5			
L318	Methoxychlor	ug/L	L1					< 5				< 5
L313	Methylene Chloride	ug/L	L1		< 1000	< 5				< 25		
L315	Methylene Chloride	ug/L	L1				< 25				< 50	
L317	Methylene Chloride	ug/L	L1		< 1000				P< 5			
L318	Methylene Chloride	ug/L	L1					< 5				< 50
L313	m-Xylene	ug/L	L1			120						
L315	m-Xylene	ug/L	L1									
L317	m-Xylene	ug/L	L1									
L318	m-Xylene	ug/L	L1					110				
L313	Naphthalene	ug/L	L1		< 100	< 100				< 100		
L315	Naphthalene	ug/L	L1				< 100				< 100	
L317	Naphthalene	ug/L	L1		< 100				< 100			
L318	Naphthalene	ug/L	L1					< 100				< 100
L313	n-Butanol	ug/L	L1		< 200000	< 1000				< 5000		
L315	n-Butanol	ug/L	L1				< 5000				< 10000	
L317	n-Butanol	ug/L	L1		< 200000				P< 1000			
L318	n-Butanol	ug/L	L1					< 1000				< 10000
L313	n-Butylbenzene	ug/L	L1		< 200	< 1				9		
L315	n-Butylbenzene	ug/L	L1				< 5				< 50	
L317	n-Butylbenzene	ug/L	L1		< 200				P 2.8			
L318	n-Butylbenzene	ug/L	L1					2.4				< 50
L313	Nitrobenzene	ug/L	L1		< 100	< 100				< 100		
L315	Nitrobenzene	ug/L	L1				< 100				< 100	
L317	Nitrobenzene	ug/L	L1		< 100				< 100			
L318	Nitrobenzene	ug/L	L1					< 100				< 100
L313	N-Nitrosodimethylamine	ug/L	L1		< 100	< 100				< 100		
L315	N-Nitrosodimethylamine	ug/L	L1				< 100				< 100	
L317	N-Nitrosodimethylamine	ug/L	L1		< 100				< 100			
L318	N-Nitrosodimethylamine	ug/L	L1					< 100				< 100
L313	N-Nitroso-di-n-propylamine	ug/L	L1			< 100				< 100		
L315	N-Nitroso-di-n-propylamine	ug/L	L1								< 100	
L317	N-Nitroso-di-n-propylamine	ug/L	L1						< 100			
L318	N-Nitroso-di-n-propylamine	ug/L	L1					< 100				< 100
L313	N-Nitrosodiphenylamine	ug/L	L1		< 100	< 100				< 100		
L315	N-Nitrosodiphenylamine	ug/L	L1				< 100				< 100	
L317	N-Nitrosodiphenylamine	ug/L	L1		< 100				< 100			
L318	N-Nitrosodiphenylamine	ug/L	L1					< 100				< 100

**Table 7
Northern Unit Leachate Analytical**

**Winnebago Landfill
Permit Renewal Application**

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	n-Propylbenzene	ug/L	L1		< 200	3.7				12		
L315	n-Propylbenzene	ug/L	L1				< 5				< 50	
L317	n-Propylbenzene	ug/L	L1	< 200					P 5.1			
L318	n-Propylbenzene	ug/L	L1					4.3				< 50
L313	o-Xylene	ug/L	L1	< 200		35				37		
L315	o-Xylene	ug/L	L1				18				< 50	
L317	o-Xylene	ug/L	L1	< 200					P 65			
L318	o-Xylene	ug/L	L1					56				79
L313	Parathion	ug/L	L1	< 2	< 2					< 2		
L315	Parathion	ug/L	L1				< 0.2				< 2	
L317	Parathion	ug/L	L1	< 2					< 2			
L318	Parathion	ug/L	L1					< 0.2				< 2
L313	Pentachlorophenol	ug/L	L1	< 0.05		T< 0.5				Q< 0.5		
L315	Pentachlorophenol	ug/L	L1				< 0.05				< 0.4	
L317	Pentachlorophenol	ug/L	L1	< 0.05					Q< 0.5			
L318	Pentachlorophenol	ug/L	L1					< 0.5				< 0.4
L313	Phenanthrene	ug/L	L1	< 100	< 100					< 100		
L315	Phenanthrene	ug/L	L1				< 100				< 100	
L317	Phenanthrene	ug/L	L1	< 100					< 100			
L318	Phenanthrene	ug/L	L1					< 100				< 100
L313	Phenolics	ug/L	L1	1.1	0.73	0.62				2.8		
L315	Phenolics	ug/L	L1				0.29				0.2	
L317	Phenolics	ug/L	L1	0.76	0.74				0.4			
L318	Phenolics	ug/L	L1					0.62				0.18
L313	p-Isopropyltoluene	ug/L	L1	< 200		22				42		
L315	p-Isopropyltoluene	ug/L	L1				< 5				< 50	
L317	p-Isopropyltoluene	ug/L	L1	< 200					P 50			
L318	p-Isopropyltoluene	ug/L	L1					33				59
L313	Polychlorinated Biphenyls(PCBs)	ug/L	L1	< 5	< 5					X< 5		
L315	Polychlorinated Biphenyls(PCBs)	ug/L	L1				< 5				< 5	
L317	Polychlorinated Biphenyls(PCBs)	ug/L	L1	< 5					T< 0.5			
L318	Polychlorinated Biphenyls(PCBs)	ug/L	L1					< 5				< 10
L313	p-Xylene	ug/L	L1			120						
L315	p-Xylene	ug/L	L1									
L317	p-Xylene	ug/L	L1									
L318	p-Xylene	ug/L	L1					110				
L313	Pyrene	ug/L	L1		130	< 100				< 100		
L315	Pyrene	ug/L	L1				< 100				< 100	
L317	Pyrene	ug/L	L1	< 100					< 100			
L318	Pyrene	ug/L	L1					< 100				< 100
L313	sec-Butylbenzene	ug/L	L1	< 200	< 1					< 5		
L315	sec-Butylbenzene	ug/L	L1				< 5				< 50	
L317	sec-Butylbenzene	ug/L	L1	< 200					P 1			
L318	sec-Butylbenzene	ug/L	L1					< 1				< 50
L313	Silvex	ug/L	L1	< 0.05	T,Q< 0.5					Q< 0.5		
L315	Silvex	ug/L	L1				< 0.05				< 0.5	
L317	Silvex	ug/L	L1	< 0.05					Q< 0.5			
L318	Silvex	ug/L	L1					< 0.5				< 0.5

Table 7
Northern Unit Leachate Analytical

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Styrene	ug/L	L1		< 200	3.1				< 8.5		
L315	Styrene	ug/L	L1				< 5				< 50	
L317	Styrene	ug/L	L1		< 200				P 4			
L318	Styrene	ug/L	L1					< 1				< 50
L313	tert-Butylbenzene	ug/L	L1		< 200	< 1				< 5		
L315	tert-Butylbenzene	ug/L	L1				< 5				< 50	
L317	tert-Butylbenzene	ug/L	L1		< 200				P< 1			
L318	tert-Butylbenzene	ug/L	L1					< 1				< 50
L313	Tetrachloroethene	ug/L	L1		< 200	< 1				< 5		
L315	Tetrachloroethene	ug/L	L1				< 5				< 50	
L317	Tetrachloroethene	ug/L	L1		< 200				P< 1			
L318	Tetrachloroethene	ug/L	L1					< 1				< 50
L313	Tetrahydrofuran	ug/L	L1		< 4000	360				180		
L315	Tetrahydrofuran	ug/L	L1				370				230	
L317	Tetrahydrofuran	ug/L	L1		< 4000				P 410			
L318	Tetrahydrofuran	ug/L	L1					600				320
L313	Toluene	ug/L	L1		< 200	240				140		
L315	Toluene	ug/L	L1				54				56	
L317	Toluene	ug/L	L1		< 200				P 86			
L318	Toluene	ug/L	L1					65				130
L313	Toxaphene	ug/L	L1		< 15	< 15				X< 15		
L315	Toxaphene	ug/L	L1				< 15				< 5	
L317	Toxaphene	ug/L	L1		< 15				T< 1.5			
L318	Toxaphene	ug/L	L1					< 15				< 5
L313	trans-1,2-Dichloroethene	ug/L	L1		< 200	< 1				< 5		
L315	trans-1,2-Dichloroethene	ug/L	L1				< 5				< 200	
L317	trans-1,2-Dichloroethene	ug/L	L1		< 200				P< 1			
L318	trans-1,2-Dichloroethene	ug/L	L1					< 1				< 200
L313	trans-1,3-Dichloropropene	ug/L	L1		< 200	< 1				< 5		
L315	trans-1,3-Dichloropropene	ug/L	L1				< 5				< 50	
L317	trans-1,3-Dichloropropene	ug/L	L1		< 200				< 1			
L318	trans-1,3-Dichloropropene	ug/L	L1					< 1				< 50
L313	trans-1,4-Dichloro-2-butene	ug/L	L1		< 200	< 1				< 5		
L315	trans-1,4-Dichloro-2-butene	ug/L	L1				< 5				< 50	
L317	trans-1,4-Dichloro-2-butene	ug/L	L1		< 200				P< 1			
L318	trans-1,4-Dichloro-2-butene	ug/L	L1					< 1				< 50
L313	Trichloroethene	ug/L	L1		< 200	< 1				< 5		
L315	Trichloroethene	ug/L	L1				< 5				< 50	
L317	Trichloroethene	ug/L	L1		< 200				P< 1			
L318	Trichloroethene	ug/L	L1					< 1				< 50
L313	Trichlorofluoromethane	ug/L	L1		< 200	< 1				< 5		
L315	Trichlorofluoromethane	ug/L	L1				< 5				< 50	
L317	Trichlorofluoromethane	ug/L	L1		< 200				P< 1			
L318	Trichlorofluoromethane	ug/L	L1					< 1				< 50
L313	Vinyl Acetate	ug/L	L1		< 1000	< 5				< 25		
L315	Vinyl Acetate	ug/L	L1				< 25				< 50	
L317	Vinyl Acetate	ug/L	L1		< 1000				P< 5			
L318	Vinyl Acetate	ug/L	L1					< 5				< 50

Table 7
Northern Unit Leachate Analytical

Winnebago Landfill
Permit Renewal Application

Well ID	Parameter	Units	List	1stQtr08	2ndQtr08	4thQtr08	2ndQtr09	4thQtr09	2ndQtr10	4thQtr10	2ndQtr11	4thQtr11
L313	Vinyl Chloride	ug/L	L1		< 400	< 2				< 10		
L315	Vinyl Chloride	ug/L	L1				< 10				< 50	
L317	Vinyl Chloride	ug/L	L1		< 400				P 4.6			
L318	Vinyl Chloride	ug/L	L1					< 2				< 50
L313	Xylenes (Total)	ug/L	L1		< 600	< 3				120		
L315	Xylenes (Total)	ug/L	L1				53				< 150	
L317	Xylenes (Total)	ug/L	L1		< 600				P 200			
L318	Xylenes (Total)	ug/L	L1					170				260

Table 8 – Northern Unit Leachate Comparisons To Initial Source Concentrations

Table 8
Northern Unit Leachate Comparison to Initial Source Concentrations

Winnebago Reclamation Service
Permit Renewal Application

Parameter	Units	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA
Inorganics						
Alkalinity, Bicarbonate as CaCO ₃	mg/L	8122.22	3970.761192	7941.5224	16063.74461	NM
Aluminum, total	ug/L	0.974444444	1.599461715	3.1989234	4.173367874	NM
Ammonia as N, total	mg/L	2427	1379.11445	2758.2289	5185.2289	20263.1666
Antimony, total	ug/L	0.035888889	0.03109841	0.0621968	0.098085709	NM
Arsenic, total	ug/L	0.755454545	0.560969939	1.1219399	1.877394424	10
Barium, total	ug/L	0.548181818	0.227544202	0.4550884	1.003270221	828.3
Beryllium, total	ug/L	ND	ND	ND	ND	NM
Biochemical Oxygen Demand	mg/L	446.8181818	269.1493333	538.29867	985.1168485	NM
Boron, total	ug/L	9.755555556	4.557442021	9.114884	18.8704396	NM
Cadmium, total	ug/L	0.00405	0.003889087	0.0077782	0.011828175	1.2
Calcium, total	mg/L	46.24444444	35.68245756	71.364915	117.6093596	NM
Chemical Oxygen Demand	mg/L	5833.636364	2878.931304	5757.8626	11591.49897	NM
Chloride, total	mg/L	3678.777778	2577.532491	5155.065	8833.84276	NM
Chromium, total	ug/L	0.435454545	0.27222651	0.544453	0.979907565	809.7
Cobalt, total	ug/L	0.077666667	0.037676252	0.0753525	0.153019172	NM
Copper, total	ug/L	0.076	0.07667855	0.1533571	0.2293571	48.3
Cyanide, total	mg/L	0.015	0.00714796	0.0142959	0.02929592	0.0962
Fecal Coliform	/100mL	ND	ND	ND	ND	NM
Fluoride, total	mg/L	1.19	0.386910842	0.7738217	1.963821685	0.4043
Iron, total	ug/L	6.881818182	5.389585918	10.779172	17.66099002	19750
Lead, total	ug/L	0.036536364	0.081449914	0.1628998	0.199436192	35.1
Magnesium, total	mg/L	69.77777778	29.79839668	59.596793	129.3745711	NM
Manganese, total	ug/L	0.067363636	0.066542126	0.1330843	0.200447889	219.9
Mercury, total	ug/L	0.00087125	0.000488977	0.000978	0.001849203	1
Nickel, total	ug/L	0.443181818	0.290433062	0.5808661	1.024047943	636.8
Nitrate as N, total	mg/L	4.25	0.919238816	1.8384776	6.088477631	NM
pH	s.u.	7.7275	0.348824557	0.6976491	8.425149114	NM
Phosphorus, total	mg/L	16.52727273	6.602589024	13.205178	29.73245078	NM
Potassium, total	mg/L	570	332.2649545	664.52991	1234.529909	NM
Selenium, total	ug/L	0.088333333	0.068640367	0.1372807	0.225614068	NM
Silver, total	ug/L	ND	ND	ND	ND	5
Sodium, total	mg/L	2027.777778	1089.997452	2179.9949	4207.772681	NM
Specific Conductance	umhos/cm	10815	5822.539946	11645.08	22460.07989	NM
Sulfate, total	mg/L	12.11666667	13.28704883	26.574098	38.69076433	NM
Thallium, total	ug/L	0.0014	0	0	0.0014	NM
Tin, total	ug/L	50.1494	111.7199388	223.43988	273.5892776	NM
Total Dissolved Solids	mg/L	10418.18182	4931.291551	9862.5831	20280.76492	NM
Total Organic Carbon	mg/L	1591.111111	1323.475013	2646.95	4238.061138	NM
Total Suspended Solids	mg/L	184.0909091	470.1515616	940.30312	1124.394032	NM
Vanadium, total	ug/L	0.0578	0.03197642	0.0639528	0.12175284	NM
Zinc, total	ug/L	9.115272727	29.81166018	59.62332	68.73859308	398.5
Organics						
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	NM
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	NM
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	NM
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	NM
1,1-Dichloroethane	ug/L	ND	ND	ND	ND	NM
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	NM
1,1-Dichloropropene	ug/L	ND	ND	ND	ND	NM
1,2,3-Trichlorobenzene	ug/L	ND	ND	ND	ND	NM
1,2,3-Trichloropropane	ug/L	ND	ND	ND	ND	NM
1,2,4-Trichlorobenzene	ug/L	ND	ND	ND	ND	NM
1,2,4-Trimethylbenzene	ug/L	36.2	19.62651268	39.253025	75.45302536	47.9
1,2-Dibromo-3-chloropropane	ug/L	ND	ND	ND	ND	NM
1,2-Dibromoethane	ug/L	ND	ND	ND	ND	NM
1,2-Dichlorobenzene	ug/L	3.3	0.707106781	1.4142136	4.714213562	NM
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	NM
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	NM
1,3,5-Trimethylbenzene	ug/L	13.95	7.439310004	14.87862	28.82862001	18.7
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	NM
1,3-Dichloropropane	ug/L	ND	ND	ND	ND	NM
1,3-Dichloropropene	ug/L	ND	ND	ND	ND	NM
1,4-Dichlorobenzene	ug/L	13.9	5.813776741	11.627553	25.52755348	28.3
1-Propanol	ug/L	ND	ND	ND	ND	NM
2,2-Dichloropropane	ug/L	ND	ND	ND	ND	NM

Table 8
Northern Unit Leachate Comparison to Initial Source Concentrations

Winnebago Reclamation Service
Permit Renewal Application

Parameter	Units	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial
2,4,6-Trichlorophenol	ug/L	ND	ND	ND	ND	GIA NM
2,4-D	ug/L	3.6	ND	ND	ND	NM
2,4-Dichlorophenol	ug/L	ND	ND	ND	ND	NM
2,4-Dimethylphenol	ug/L	ND	ND	ND	ND	340.9
2,4-Dinitrophenol	ug/L	ND	ND	ND	ND	NM
2,4-Dinitrotoluene	ug/L	ND	ND	ND	ND	NM
2,6-Dinitrotoluene	ug/L	ND	ND	ND	ND	NM
2-Butanone	ug/L	292	ND	ND	ND	2.5
2-Chloroethyl vinyl ether	ug/L	ND	ND	ND	ND	NM
2-Chloronaphthalene	ug/L	ND	ND	ND	ND	NM
2-Chlorophenol	ug/L	ND	ND	ND	ND	NM
2-Chlorotoluene	ug/L	ND	ND	ND	ND	NM
2-Hexanone	ug/L	99	ND	ND	ND	NM
2-Nitrophenol	ug/L	ND	ND	ND	ND	NM
2-Propanol	ug/L	ND	ND	ND	ND	NM
3,3'-Dichlorobenzidine	ug/L	ND	ND	ND	ND	NM
4,4'-DDD	ug/L	ND	ND	ND	ND	NM
4,4'-DDE	ug/L	ND	ND	ND	ND	NM
4,4'-DDT	ug/L	ND	ND	ND	ND	NM
4,6-Dinitro-2-methylphenol	ug/L	ND	ND	ND	ND	NM
4-Bromophenyl-phenylether	ug/L	ND	ND	ND	ND	NM
4-Chlorophenyl-phenyl Ether	ug/L	ND	ND	ND	ND	NM
4-Chlorotoluene	ug/L	ND	ND	ND	ND	NM
4-Methyl-2-pentanone	ug/L	29.2	21.38036482	42.76073	71.96072965	22.5
4-Methylphenol	ug/L	1333.333333	1553.61943	3107.2389	4440.572193	NM
4-Nitrophenol	ug/L	ND	ND	ND	ND	NM
Acenaphthene	ug/L	ND	ND	ND	ND	NM
Acetone	ug/L	770.6666667	1170.6261	2341.2522	3111.918867	103.7
Alachlor	ug/L	ND	ND	ND	ND	NM
Aldicarb	ug/L	15.93333333	8.05067285	16.101346	32.03467903	NM
Aldrin	ug/L	ND	ND	ND	ND	NM
alpha-BHC	ug/L	ND	ND	ND	ND	NM
Anthracene	ug/L	ND	ND	ND	ND	NM
Alrazine	ug/L	ND	ND	ND	ND	NM
Benzene	ug/L	5.025	1.519594244	3.0391885	8.064188488	2.5
Benzo(a)anthracene	ug/L	ND	ND	ND	ND	NM
Benzo(a)pyrene	ug/L	ND	ND	ND	ND	NM
Benzo(b)fluoranthene	ug/L	ND	ND	ND	ND	NM
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	ND	NM
Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	NM
beta-BHC	ug/L	ND	ND	ND	ND	NM
bis(2-Chloroethoxy)methane	ug/L	ND	ND	ND	ND	NM
bis(2-Chloroethyl) Ether	ug/L	ND	ND	ND	ND	NM
bis(2-Chloroisopropyl)Ether	ug/L	ND	ND	ND	ND	NM
bis(2-Ethylhexyl)phthalate	ug/L	820	537.4011537	1074.8023	1894.802307	160.1
bis(Chloromethyl) ether	ug/L	ND	ND	ND	ND	NM
Bromobenzene	ug/L	ND	ND	ND	ND	NM
Bromochloromethane	ug/L	ND	ND	ND	ND	NM
Bromodichloromethane	ug/L	ND	ND	ND	ND	NM
Bromofom	ug/L	ND	ND	ND	ND	NM
Bromomethane	ug/L	ND	ND	ND	ND	NM
Butylbenzylphthalate	ug/L	ND	ND	ND	ND	NM
Carbofuran	ug/L	ND	ND	ND	ND	NM
Carbon Disulfide	ug/L	2	NA	NA	NA	NM
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	NM
Chlordane	ug/L	ND	ND	ND	ND	NM
Chlorobenzene	ug/L	2.533333333	1.4571662	2.9143324	5.447665733	NM
Chloroethane	ug/L	ND	ND	ND	ND	NM
Chloroform	ug/L	ND	ND	ND	ND	NM
Chloromethane	ug/L	ND	ND	ND	ND	NM
Chrysene	ug/L	ND	ND	ND	ND	NM
cis-1,2-Dichloroethene	ug/L	12.3	7.726146085	15.452292	27.75229217	2.5
delta-BHC	ug/L	ND	ND	ND	ND	NM
Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	ND	NM
Dibromochloromethane	ug/L	ND	ND	ND	ND	NM
Dibromomethane	ug/L	ND	ND	ND	ND	NM
Dichlorodifluoromethane	ug/L	ND	ND	ND	ND	NM
Dieldrin	ug/L	ND	ND	ND	ND	NM
Diethylphthalate	ug/L	ND	ND	ND	ND	NM
Dimethylphthalate	ug/L	ND	ND	ND	ND	NM
Di-n-butylphthalate	ug/L	ND	ND	ND	ND	NM
Di-n-octylphthalate	ug/L	ND	ND	ND	ND	NM
Dioxin Screen	ug/L	ND	ND	ND	ND	NM
Endosulfan I	ug/L	0.83	0	0	0.83	NM
Endosulfan II	ug/L	ND	ND	ND	ND	NM
Endosulfan Sulfate	ug/L	ND	ND	ND	ND	NM
Endrin	ug/L	ND	ND	ND	ND	NM
Endrin Aldehyde	ug/L	ND	ND	ND	ND	NM
Ethyl Acetate	ug/L	ND	ND	ND	ND	NM
Ethylbenzene	ug/L	56.33333333	23.33809475	46.67619	103.0095228	49

Table 8
Northern Unit Leachate Comparison to Initial Source Concentrations

Winnebago Reclamation Service
Permit Renewal Application

Parameter	Units	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA
Fluoranthene	ug/L	120	0	0	120	NM
Fluorene	ug/L	ND	ND	ND	ND	NM
gamma-BHC (Lindane)	ug/L	ND	ND	ND	ND	NM
Heptachlor	ug/L	ND	ND	ND	ND	NM
Heptachlor Epoxide	ug/L	ND	ND	ND	ND	NM
Hexachlorobenzene	ug/L	ND	ND	ND	ND	NM
Hexachlorobutadiene	ug/L	ND	ND	ND	ND	NM
Hexachlorocyclopentadiene	ug/L	ND	ND	ND	ND	NM
Hexachloroethane	ug/L	ND	ND	ND	ND	NM
Hexane Ext. Material (HEM) by SPE	mg/L	29.98333333	13.28162892	26.563258	56.54659117	NM
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	NM
Iodomethane	ug/L	ND	ND	ND	ND	NM
Isopropylbenzene	ug/L	4.925	1.941434178	3.8828684	8.807868356	NM
m,p-Xylene	ug/L	109.5	48.59526726	97.190535	206.6905345	NM
Methoxychlor	ug/L	ND	ND	ND	ND	NM
Methylene Chloride	ug/L	ND	ND	ND	ND	NM
m-Xylene	ug/L	115	7.071067812	14.142136	129.1421356	NM
Naphthalene	ug/L	ND	ND	ND	ND	79.1
n-Butanol	ug/L	ND	ND	ND	ND	NM
n-Butylbenzene	ug/L	4.733333333	3.700450423	7.4009008	12.13423418	NM
Nitrobenzene	ug/L	ND	ND	ND	ND	NM
N-Nitrosodimethylamine	ug/L	ND	ND	ND	ND	NM
N-Nitroso-di-n-propylamine	ug/L	ND	ND	ND	ND	NM
N-Nitrosodiphenylamine	ug/L	ND	ND	ND	ND	NM
n-Propylbenzene	ug/L	6.275	3.859512059	7.7190241	13.99402412	5.6
o-Xylene	ug/L	48.33333333	22.37558193	44.751164	93.08449719	NM
Parathion	ug/L	ND	ND	ND	ND	NM
Pentachlorophenol	ug/L	ND	ND	ND	ND	NM
Phenanthrene	ug/L	ND	ND	ND	ND	61.8
Phenolics	ug/L	0.767272727	0.729220007	1.45844	2.225712741	61.1
p-Isopropyltoluene	ug/L	41.2	14.41180072	28.823601	70.02360144	0.0375
Polychlorinated Biphenyls(PCBs)	ug/L	ND	ND	ND	ND	NM
p-Xylene	ug/L	115	7.071067812	14.142136	129.1421356	NM
Pyrene	ug/L	130	0	0	130	NM
sec-Butylbenzene	ug/L	1	0	0	1	NM
Silvex	ug/L	ND	ND	ND	ND	NM
Styrene	ug/L	3.55	0.636396103	1.2727922	4.822792206	NM
tert-Butylbenzene	ug/L	ND	ND	ND	ND	NM
Tetrachloroethene	ug/L	ND	ND	ND	ND	NM
Tetrahydrofuran	ug/L	352.8571429	135.8570677	271.71414	624.5712784	1298.4
Toluene	ug/L	110.1428571	66.89899992	133.798	243.940857	119.2
Toxaphene	ug/L	ND	ND	ND	ND	NM
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	NM
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	NM
trans-1,4-Dichloro-2-butene	ug/L	ND	ND	ND	ND	NM
Trichloroethene	ug/L	ND	ND	ND	ND	NM
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	NM
Vinyl Acetate	ug/L	ND	ND	ND	ND	NM
Vinyl Chloride	ug/L	4.6	ND	ND	ND	28.5
Xylenes (Total)	ug/L	160.6	78.65621399	157.31243	317.912428	145.9

Notes:
ND - Not Detected
NM - Not Modeled

Table 9 – GMZ Parameters

Table 9
Northern Unit GMZ Parameters

Winnebago Landfill
Permit Renewal Tables

Quarterly
Ammonia, dissolved
Ammonia, total
Arsenic, dissolved
Arsenic, total
Barium, total
Boron, dissolved
Boron, total
Chloride, dissolved
Chloride, total
Fluoride, total
Nitrate, dissolved
Nitrate, total
Potassium, total
Sodium, total
Annual - Second Quarter
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,4-Dichlorobenzene
Ethylbenzene
Tetrahydrofuran

**Table 10 – Northern Unit Leachate Comparisons To Contaminant
Transport Model**

Table 10
Northern Unit Leachate Comparison to Contaminant Transport Model

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Max Leachate Result	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA	Model Prediction Factor at ZOA	Predicted Conc. At ZOA (Max * MPF)	AGQS	> than AGQS?
Inorganics											
Ammonia as N, total	mg/l	4500	2427.00	1379.11445	2758.2289	5185.2289	20263.1666	0.000242	1.089	900	Pass
Arsenic, total	ug/L	1.8	0.76	0.560969939	1.1219399	1.877394424	10	0.000242	0.0004356	10	Pass
Barium, total	ug/L	0.84	0.55	0.227544202	0.4550884	1.003270221	828.3	0.000242	0.00020328	225180.6	Pass
Boron, total	ug/L	15	9.76	4.557442021	9.114884	18.8704396	NM	0.000242	0.00363	200	Pass
Chloride, total	mg/l	7600	3678.78	2577.532491	5155.065	8833.84276	NM	0.000242	1.8392	87.51	Pass
Ethylbenzene	ug/L	86	56.33	23.33809475	46.67619	103.0095228	49	0.000242	0.020812	5	Pass
Fluoride, total	mg/l	1.6	1.19	0.386910842	0.7738217	1.963821685	0.4043	0.000242	0.0003872	273.35	Pass
Nitrate as N, total	mg/l	4.9	4.25	0.919238816	1.8384776	6.088477631	NM	0.000242	0.0011858	11.74	Pass
Potassium, total	mg/l	1100	570.00	332.2649545	664.52991	1234.529909	NM	0.000242	0.2662	29	Pass
Sodium, total	mg/l	3500	2027.78	1089.997452	2179.9949	4207.772681	NM	0.000242	0.847	164.79	Pass
Sulfate, total	mg/l	36	12.12	13.28704883	26.574098	38.69076433	NM	0.000242	0.008712	179.37	Pass
Alkalinity, Bicarbonate as CaCO3	mg/L	15000	8122.222222	3970.761192	7941.5224	16063.74461	NM	0.000242	3.63	960	Pass
Aluminum, total	ug/L	5	0.974444444	1.599461715	3.1989234	4.173367874	NM	0.000242	0.00121	66602.6	Pass
Antimony, total	ug/L	0.1	0.035888889	0.03109841	0.0621968	0.098085709	NM	0.000242	0.0000242	5	Pass
Beryllium, total	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Biochemical Oxygen Demand	mg/L	1000	446.8181818	269.1493333	538.29867	985.1168485	NM	0.000242	0.242	4.04	Pass
Calcium, total	mg/L	130	46.24444444	35.68245756	71.364915	117.6093596	NM	0.000242	0.03146	3093	Pass
Chemical Oxygen Demand	mg/L	11000	5833.636364	2878.931304	5757.8626	11591.49897	NM	0.000242	2.662	50.04	Pass
Cobalt, total	ug/L	0.13	0.077666667	0.037676252	0.0753525	0.153019172	NM	0.000242	0.00003146	50	Pass
Fecal Coliform	/100mL	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Magnesium, total	mg/L	100	69.77777778	29.79839668	59.596793	129.3745711	NM	0.000242	0.0242	109.5	Pass
pH	s.u.	8.34	7.7275	0.348824557	0.6976491	8.425149114	NM	0.000242	0.00201828	5.4-8.1	Pass
Phosphorus, total	mg/L	24	16.52727273	6.602589024	13.205178	29.73245078	NM	0.000242	0.005808	NA	Pass
Selenium, total	ug/L	0.23	0.088333333	0.068640367	0.1372807	0.225614068	NM	0.000242	0.00005566	4	Pass
Specific Conductance	umhos/cm	19000	10815	5822.539946	11645.08	22460.07989	NM	0.000242	4.598	3820	Pass
Thallium, total	ug/L	0.0014	0.0014	0	0	0.0014	NM	0.000242	3.388E-07	200	Pass
Tin, total	ug/L	250	50.1494	111.7199388	223.43988	273.5892776	NM	0.000242	0.0605	NA	Pass
Total Dissolved Solids	mg/L	21000	10418.18182	4931.291551	9862.5831	20280.76492	NM	0.000242	5.082	1755.87	Pass
Total Organic Carbon	mg/L	4700	1591.111111	1323.475013	2646.95	4238.061138	NM	0.000242	1.1374	4301.02	Pass
Total Suspended Solids	mg/L	1600	184.0909091	470.1515616	940.30312	1124.394032	NM	0.000242	0.3872	NA	Pass
Vanadium, total	ug/L	0.1	0.0578	0.03197642	0.0639528	0.12175284	NM	0.000242	0.0000242	100	Pass
Organics											
1,1,1-Trichloroethane	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	12	Pass
1,1-Dichloroethane	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	31	Pass
1,2,3-Trichlorobenzene	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2,4-Trichlorobenzene	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2-Dichlorobenzene	ug/l	3.8	3.3	0.707106781	1.4142136	4.714213562	NM	0.000242	0.0009196	5	Pass
1,4-Dichlorobenzene	ug/L	23	13.90	5.813776741	11.627553	25.52755348	28.3	0.000242	0.005566	5	Pass
Acetone	ug/L	2800	770.67	1170.6261	2341.2522	3111.918867	103.7	0.000242	0.6776	10	Pass
Benzene	ug/l	7.2	5.025	1.519594244	3.0391885	8.064188488	2.5	0.000242	0.0017424	2.8	Pass
Chlorobenzene	ug/l	4.2	2.53	1.4571662	2.9143324	5.447665733	NM	0.000242	0.0010164	5	Pass
cis-1,2-Dichloroethene	ug/L	22	12.30	7.726146085	15.452292	27.75229217	2.5	0.000242	0.005324	5	Pass
Phenolics	ug/l	2.8	0.767272727	0.729220007	1.45844	2.225712741	61.1	0.000242	0.0006776	100	Pass
Tetrachloroethene	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	26	Pass
Tetrahydrofuran	ug/L	600	352.86	135.8570677	271.71414	624.5712784	1298.4	0.000242	0.1452	42	Pass
Trichloroethene	ug/l	ND	ND	ND	ND	ND	NM	0.000242	ND	66	Pass
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass

Table 10
Northern Unit Leachate Comparison to Contaminant Transport Model

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Max Leachate Result	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA	Model Prediction Factor at ZOA	Predicted Conc. At ZOA (Max * MPF)	AGQS	> than AGQS?
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,1-Dichloroethene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	2.5	Pass
1,1-Dichloropropene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2,3-Trichloropropane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2-Dibromo-3-chloropropane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2-Dibromoethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	2.5	Pass
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	6	Pass
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,3-Dichloropropane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
1-Propanol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1000	Pass
2,2-Dichloropropane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
2,4,6-Trichlorophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2,4-D	ug/L	3.6	3.6	0	0	3.6	NM	0.000242	0.0008712	2	Pass
2,4-Dichlorophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2,4-Dinitrophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2,4-Dinitrotoluene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2,6-Dinitrotoluene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2-Chloroethyl vinyl ether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2-Chloronaphthalene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2-Chlorophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2-Chlorotoluene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
2-Hexanone	ug/L	99	99	ND	ND	ND	NM	0.000242	ND	10	Pass
2-Nitrophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
2-Propanol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1000	Pass
3,3'-Dichlorobenzidine	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4,4'-DDD	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4,4'-DDE	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4,4'-DDT	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.25	Pass
4,6-Dinitro-2-methylphenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4-Bromophenyl-phenylether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4-Chlorophenyl-phenyl Ether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
4-Chlorotoluene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
4-Methylphenol	ug/L	3100	1333.333333	1553.61943	3107.2389	4440.572193	NM	0.000242	0.7502	10	Pass
4-Nitrophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Acenaphthene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Alachlor	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	2	Pass
Aldicarb	ug/L	22	15.93333333	8.05067285	16.101346	32.03467903	NM	0.000242	0.005324	1	Pass
Aldrin	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.5	Pass
alpha-BHC	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Anthracene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Atrazine	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	3	Pass
Benzo(a)anthracene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass

Table 10
Northern Unit Leachate Comparison to Contaminant Transport Model

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Max Leachate Result	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA	Model Prediction Factor at ZOA	Predicted Conc. At ZOA (Max * MPF)	AGQS	> than AGQS?
Benzo(a)pyrene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Benzo(b)fluoranthene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Benzo(g,h,i)perylene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
beta-BHC	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
bis(2-Chloroethoxy)methane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
bis(2-Chloroethyl) Ether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
bis(2-Chloroisopropyl)Ether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
bis(Chloromethyl) ether	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Bromobenzene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Bromochloromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Bromodichloromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Bromoform	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Bromomethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Butylbenzylphthalate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Carbofuran	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Carbon Disulfide	ug/L	2	2	0	0	2	NM	0.000242	0.000484	5	Pass
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Chlordane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1.2	Pass
Chloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Chloroform	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Chloromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Chrysene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
delta-BHC	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Dibromochloromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Dibromomethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Dichlorodifluoromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	19	Pass
Dieldrin	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.25	Pass
Diethylphthalate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	100	Pass
Dimethylphthalate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	100	Pass
Di-n-butylphthalate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	100	Pass
Di-n-octylphthalate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Dioxin Screen	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Endosulfan I	ug/L	0.83	0.83	0	0	0.83	NM	0.000242	0.00020086	NA	Pass
Endosulfan II	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Endosulfan Sulfate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Endrin	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.25	Pass
Endrin Aldehyde	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Ethyl Acetate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Fluoranthene	ug/L	120	120	0	0	120	NM	0.000242	0.02904	NA	Pass
Fluorene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
gamma-BHC (Lindane)	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.5	Pass
Heptachlor	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.5	Pass
Heptachlor Epoxide	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	0.5	Pass

Table 10
Northern Unit Leachate Comparison to Contaminant Transport Model

Winnebago Landfill
Permit Renewal Application

Parameter	Units	Max Leachate Result	Mean Leachate Result	Standard Deviation (STDV)	(2xSTDV)	Mean + (2xSTDV)	Source Concentration From Initial GIA	Model Prediction Factor at ZOA	Predicted Conc. At ZOA (Max * MPF)	AGQS	> than AGQS?
Hexachlorobenzene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Hexachlorobutadiene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	100	Pass
Hexachlorocyclopentadiene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Hexachloroethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Hexane Ext. Material (HEM) by SPE	mg/L	48	29.98333333	13.28162892	26.563258	56.54659117	NM	0.000242	0.011616	5	Pass
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
Iodomethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass
Isopropylbenzene	ug/L	7.4	4.925	1.941434178	3.8828684	8.807868356	NM	0.000242	0.0017908	5	Pass
m,p-Xylene	ug/L	180	109.5	48.59526726	97.190535	206.6905345	NM	0.000242	0.04356	5	Pass
Methoxychlor	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1.2	Pass
Methylene Chloride	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	8	Pass
m-Xylene	ug/L	120	115	7.071067812	14.142136	129.1421356	NM	0.000242	0.02904	5	Pass
n-Butanol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1000	Pass
n-Butylbenzene	ug/L	9	4.733333333	3.700450423	7.4009008	12.13423418	NM	0.000242	0.002178	5	Pass
Nitrobenzene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
N-Nitrosodimethylamine	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
N-Nitroso-di-n-propylamine	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
N-Nitrosodiphenylamine	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	NA	Pass
o-Xylene	ug/L	79	48.33333333	22.37558193	44.751164	93.08449719	NM	0.000242	0.019118	5	Pass
Parathion	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1	Pass
Pentachlorophenol	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	500	Pass
Polychlorinated Biphenyls(PCBs)	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	2.5	Pass
p-Xylene	ug/L	120	115	7.071067812	14.142136	129.1421356	NM	0.000242	0.02904	5	Pass
Pyrene	ug/L	130	130	0	0	130	NM	0.000242	0.03146	NA	Pass
sec-Butylbenzene	ug/L	1	1	0	0	1	NM	0.000242	0.000242	5	Pass
Silvex	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	1	Pass
Styrene	ug/L	4	3.55	0.636396103	1.2727922	4.822792206	NM	0.000242	0.000968	10	Pass
tert-Butylbenzene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Toxaphene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	2.5	Pass
trans-1,2-Dichloroethene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
trans-1,4-Dichloro-2-butene	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Trichlorofluoromethane	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	5	Pass
Vinyl Acetate	ug/L	ND	ND	ND	ND	ND	NM	0.000242	ND	10	Pass

Notes:

NA - No AGQS Value

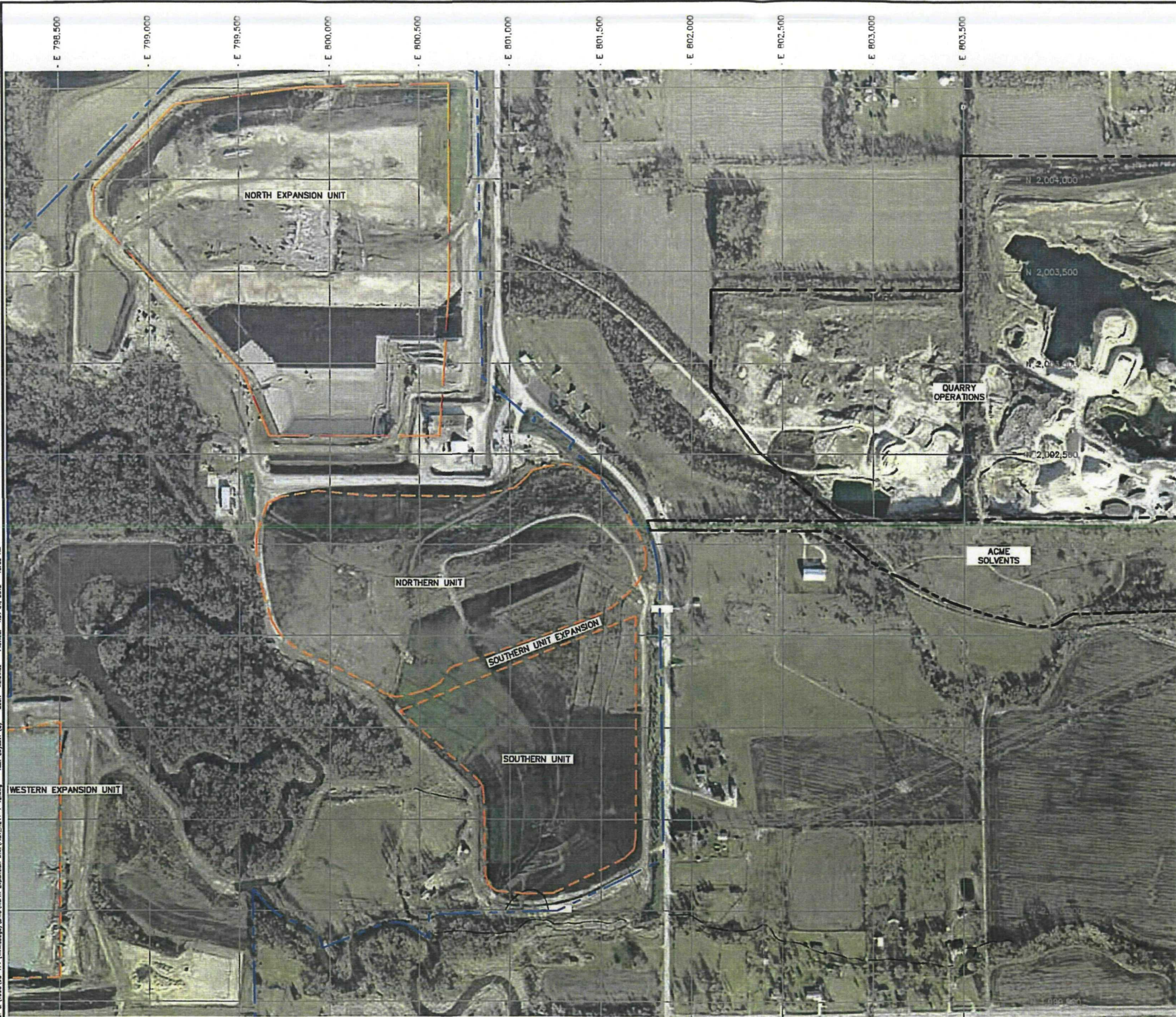
ND - Not Detected

NM - Not Modeled

Figures

Figure 1 – Area Location Map

File: \\1990\90-114 (Winnebago)\DWG\Winnebago Expansion Unit\FIG. 1-12.dwg User: winnebago Plotter: HP CL 2012 - 10:02 AM



LEGEND

--- CURRENTLY PERMITTED FILL BOUNDARY

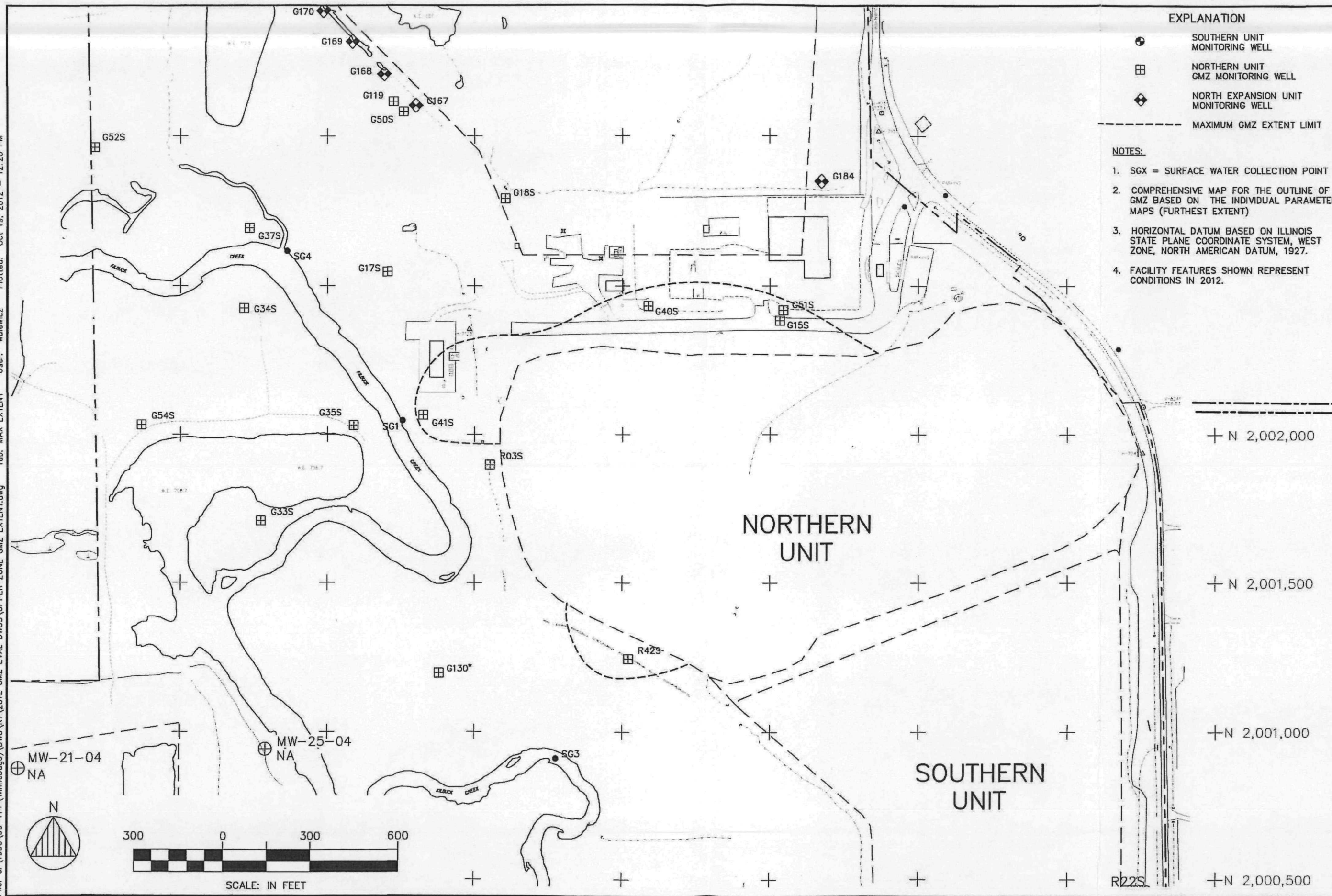
NOTE:
AERIAL PHOTOGRAPHY TAKEN ON DECEMBER 16,
2011 BY AERO-METRIC, INC.

DATE: OCTOBER 2012		PROJECT #: 90-114		SHEET NUMBER:	
FIG. 1					
AREA LOCATION MAP					
PLANS PREPARED FOR WINNEBAGO LANDFILL ROCKFORD, WINNEBAGO COUNTY, ILLINOIS					
APPROVED BY:		DESIGNED BY:		DRAWN BY:	
TNS		TNS		MPH	
ANDREWS ENGINEERING, INC. 3415 S. SPRINGFIELD AVE., SUITE 200 SPRINGFIELD, ILLINOIS 62761-1225 Tel: (217) 397-2334 Fax: (217) 397-8493 Peoria, IL • Naperville, IL • Indianapolis, IN • Warrenville, IL					
REV		DESCRIPTION		ADDED COORDINATE SYSTEM GRID	
1		5/11/70			

Figure 2 – Site Location Map

Figure 3 – 2012 Upper Zone GMZ Boundary Map

File: J:\1990\90-114 (Winnebago)\DWG\K1\2012 GMZ EVAL DWGS\UPPER ZONE GMZ EXTENT.dwg Tab: MAX EXTENT User: wulewicz Plotted: Oct 19, 2012 - 12:20 PM



EXPLANATION

- SOUTHERN UNIT MONITORING WELL
- NORTHERN UNIT GMZ MONITORING WELL
- NORTH EXPANSION UNIT MONITORING WELL
- MAXIMUM GMZ EXTENT LIMIT

NOTES:

- SGX = SURFACE WATER COLLECTION POINT
- COMPREHENSIVE MAP FOR THE OUTLINE OF GMZ BASED ON THE INDIVIDUAL PARAMETER MAPS (FURTHEST EXTENT)
- HORIZONTAL DATUM BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM, 1927.
- FACILITY FEATURES SHOWN REPRESENT CONDITIONS IN 2012.

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Tel (217) 787-2334 Fax (217) 787-9495
Ponchartraine, IL • Indianapolis, IN • Warrenton, MO



2012 UPPER ZONE GMZ BOUNDARY MAP

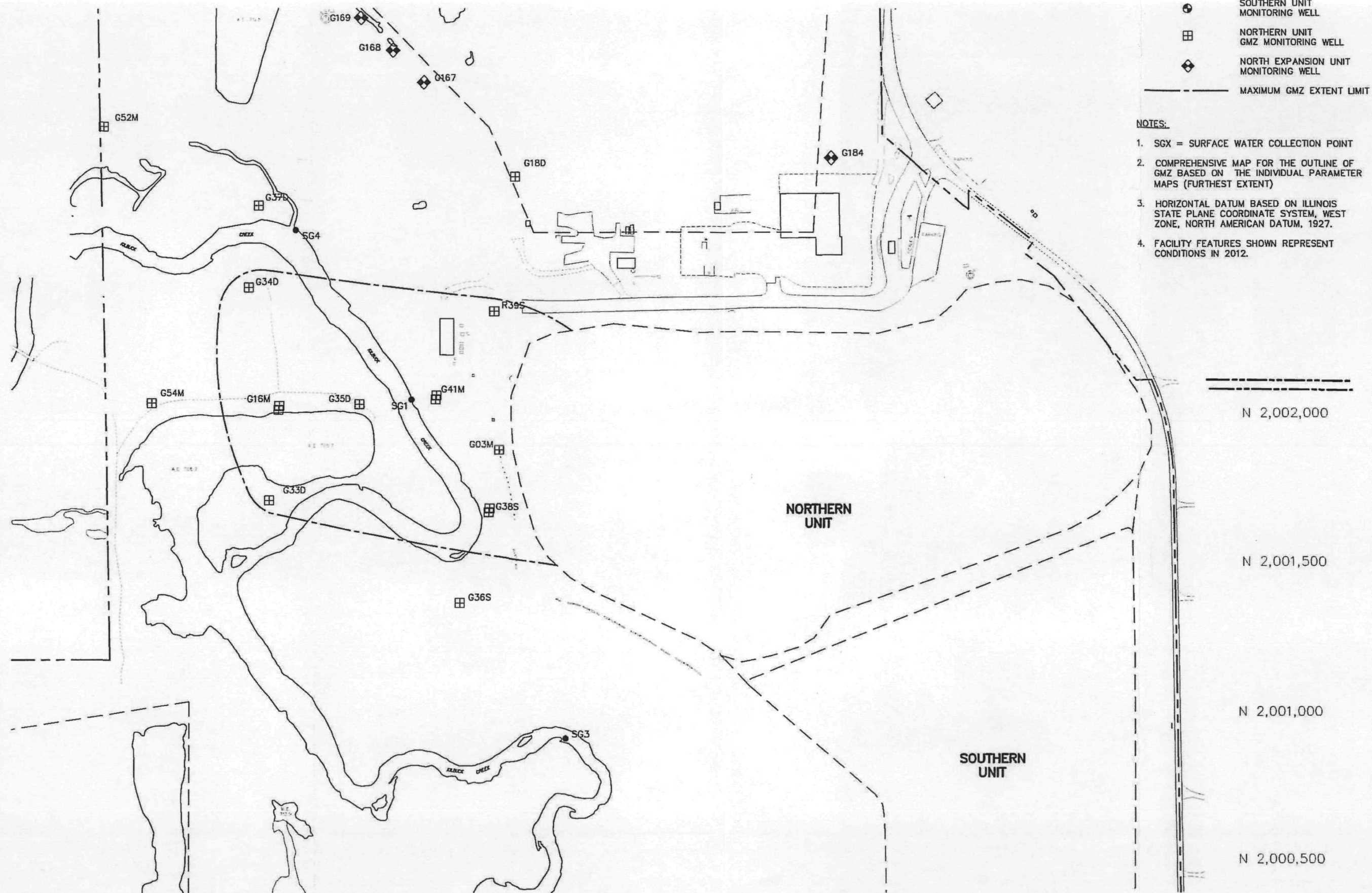
PLANS PREPARED FOR
WINNEBAGO LANDFILL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

DATE:
OCTOBER 2012
PROJECT ID:
90-114
SHEET NUMBER:

FIG. 3

Figure 4 – 2012 Lower Zone GMZ Boundary Map

Fig. 4: 11990\90-114 (Winnebago)\DWG\112012 GMZ EVAL DWG\GMZ_LOWER_ZONE.dwg User: wufwicz Plotted: Oct 10, 2012 - 12:25 PM



EXPLANATION

- SOUTHERN UNIT MONITORING WELL
- NORTHERN UNIT GMZ MONITORING WELL
- ◆ NORTH EXPANSION UNIT MONITORING WELL
- MAXIMUM GMZ EXTENT LIMIT

NOTES:

1. SGX = SURFACE WATER COLLECTION POINT
2. COMPREHENSIVE MAP FOR THE OUTLINE OF GMZ BASED ON THE INDIVIDUAL PARAMETER MAPS (FURTHEST EXTENT)
3. HORIZONTAL DATUM BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM, 1927.
4. FACILITY FEATURES SHOWN REPRESENT CONDITIONS IN 2012.

REVISIONS		DATE	DESCRIPTION
BY			
DATE			
DESCRIPTION			
APPROVED BY: SRH DESIGNED BY: SRH DRAWN BY: MPN			
2012 LOWER ZONE GMZ BOUNDARY MAP			
PLANS PREPARED FOR			
WINNEBAGO RECLAMATION SERVICES, INC.			
PAGEL LANDFILL FACILITY			
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS			
DATE: OCTOBER 2012			
PROJECT NO: 90-114			
SHEET NUMBER:			
FIG. 4			

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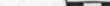


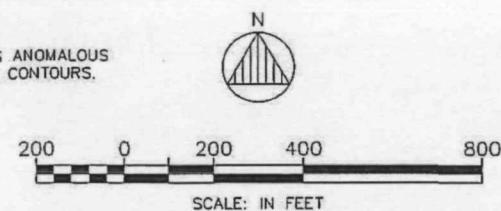
APPENDICES

Appendix A

Potentiometric Surface Maps












1. THE ELEVATION RECORDED AT G119 APPEARS ANOMALOUS AND WAS NOT USED IN THE COMPILATION OF THE CONTOURS.
2. CONTOUR INTERVAL = 2.0 FT
3. i = HYDRAULIC GRADIENT
4. SAMPLE DATE: JANUARY 8, 2008.
- 200
- 



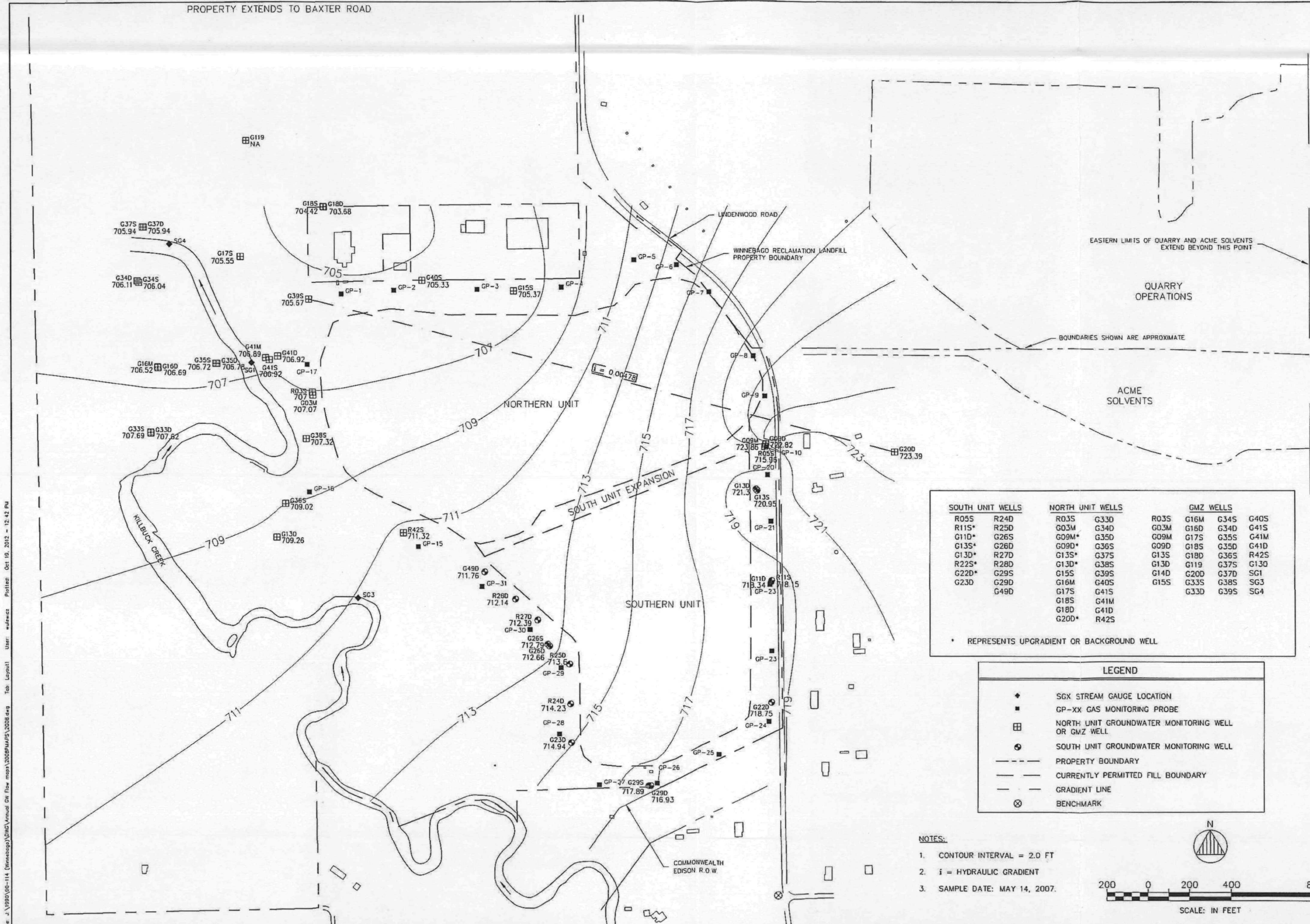
<u>SOUTH UNIT WELLS</u>		<u>NORTH UNIT WELLS</u>		<u>CMZ WELLS</u>			
R05S	R24D	R03S	G33D	R03S	G16M	G34S	G40S
R11S*	R25D	G03M	G34D	G03M	G16D	G34D	G41S
G11D*	G26S	G09M*	G35D	G09M	G17S	G35S	G41M
G13S*	G26D	G09D*	G36S	G09D	G18S	G35D	G41D
G13D*	R27D	G13S*	G37S	G13S	G18D	G36S	R42S
R22S*	R28D	G13D*	G38S	G13D	G119	G37S	G13D
G22D*	G29S	G15S	G39S	G14D	G20D	G37D	SG1
G23D	G29D	G16M	G40S	G15S	G33S	G38S	SG3
	G49D	G17S	G41S		G33D	G39S	SG4
		G18S	G41M				
		G18D	G41D				
		G20D*	R42S				

* REPRESENTS UPGRADIENT OR BACKGROUND WELL

LEGEND	
	SGX STREAM GAUGE LOCATION
	GP-XX GAS MONITORING PROBE
	NORTH UNIT GROUNDWATER MONITORING WELL OR GMZ WELL
	SOUTH UNIT GROUNDWATER MONITORING WELL
	PROPERTY BOUNDARY
	CURRENTLY PERMITTED FILL BOUNDARY
	GRADIENT LINE
	BENCHMARK

1008	SHEET NUMBER:	PROJECT ID: 90-114	DATE: JULY 2007	POTENTIOMETRIC SURFACE MAP - 1ST QUARTER 2008 PLANS PREPARED FOR WINNEBAGO LANDFILL ROCKFORD, WINNEBAGO COUNTY, ILLINOIS	 <p>ANDREWS ENGINEERING, INC. 3300 Ginger Creek Drive, Springfield, IL 62711-7233 Phone: (217) 781-2536 Fax: (217) 781-2556 E-mail: andrews@andrewseng.com Website: www.andrewseng.com Peoria, IL - Indianapolis, IL - Indianapolis, IN - Washington, MD</p>	APPROVED BY: _____ SRH _____ LUE _____ DRAIN BY: _____ SRH _____ LUE _____				REVISIONS <table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		NO	DATE	DESCRIPTION	BY																
	NO	DATE	DESCRIPTION			BY																									

PROPERTY EXTENDS TO BAXTER ROAD



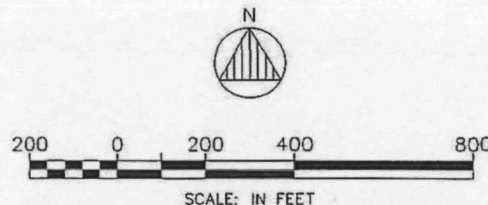
SOUTH UNIT WELLS		NORTH UNIT WELLS		GMZ WELLS			
R03S	R24D	R03S	G33D	R03S	G16M	G34S	G40S
R11S*	R25D	G03M	G34D	G03M	G16D	G34D	G41S
G11D*	G26S	G09M*	G35D	G09M	G17S	G35S	G41M
G13S*	G26D	G09D*	G36S	G09D	G18S	G35D	G41D
G13D*	R27D	G13S*	G37S	G13S	G18D	G36S	R42S
R22S*	R28D	G13D*	G38S	G13D	G119	G37S	G13Q
G22D*	G29S	G15S	G39S	G14D	G20D	G37D	SG1
G23D	G29D	G16M	G40S	G15S	G33S	G38S	SG3
	G49D	G17S	G41S		G33D	G39S	SG4
		G18S	G41M				
		G18D	G41D				
		G20D*	R42S				

* REPRESENTS UPGRADIENT OR BACKGROUND WELL

LEGEND	
◆	SGX STREAM GAUGE LOCATION
■	GP-XX GAS MONITORING PROBE
⊞	NORTH UNIT GROUNDWATER MONITORING WELL OR GMZ WELL
●	SOUTH UNIT GROUNDWATER MONITORING WELL
---	PROPERTY BOUNDARY
---	CURRENTLY PERMITTED FILL BOUNDARY
- - -	GRADIENT LINE
⊗	BENCHMARK

NOTES:

1. CONTOUR INTERVAL = 2.0 FT
2. i = HYDRAULIC GRADIENT
3. SAMPLE DATE: MAY 14, 2007.



REVISIONS

NO	DATE	DESCRIPTION	BY

APPROVED BY: SRH

DESIGNED BY: SRH

DRAWN BY: LUE

POTENTIOMETRIC SURFACE MAP - 2ND QUARTER 2008

PLANS PREPARED FOR
WINNEBAGO LANDFILL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

DATE:
JULY 2008

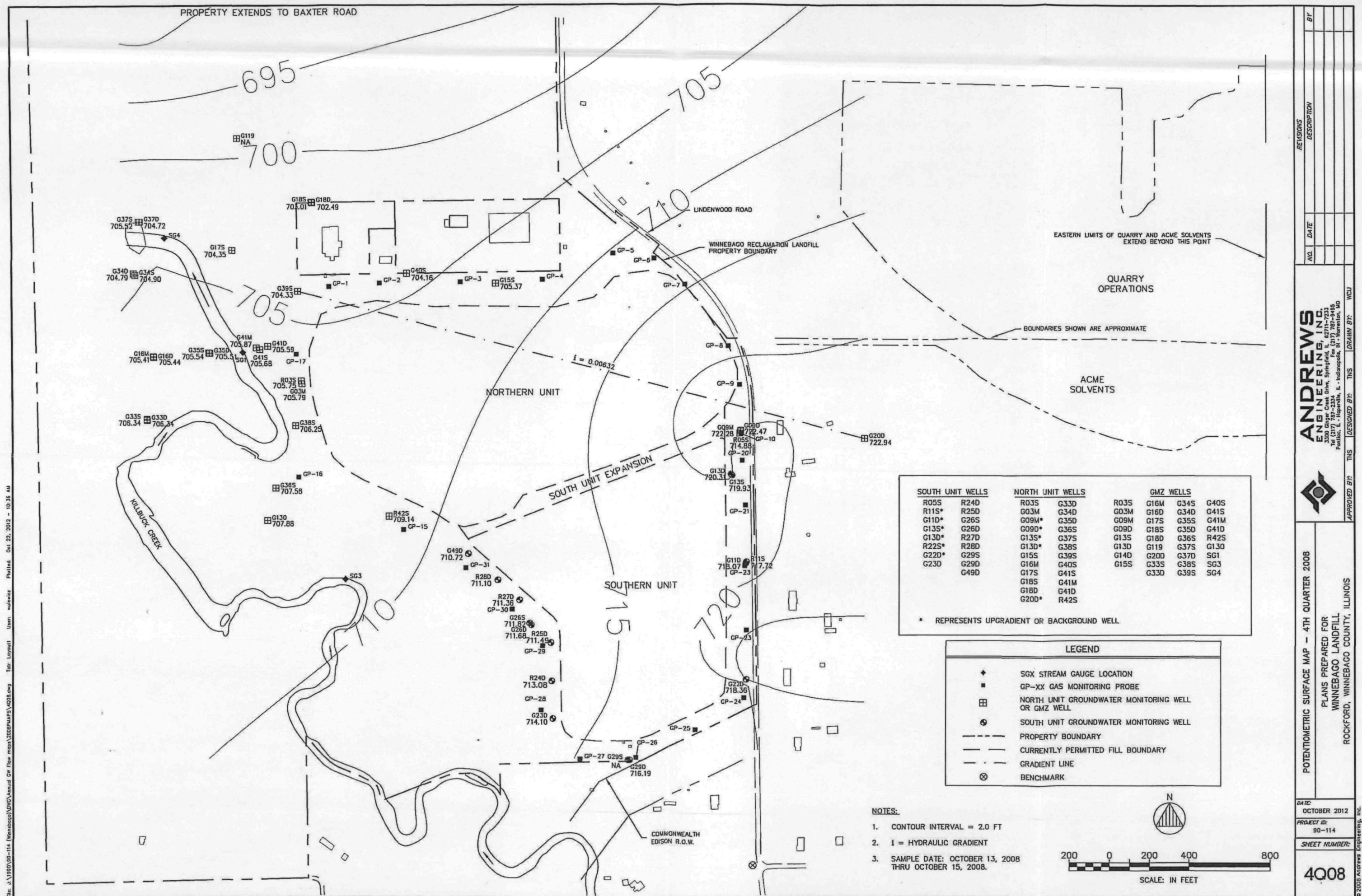
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SHEET NUMBER:
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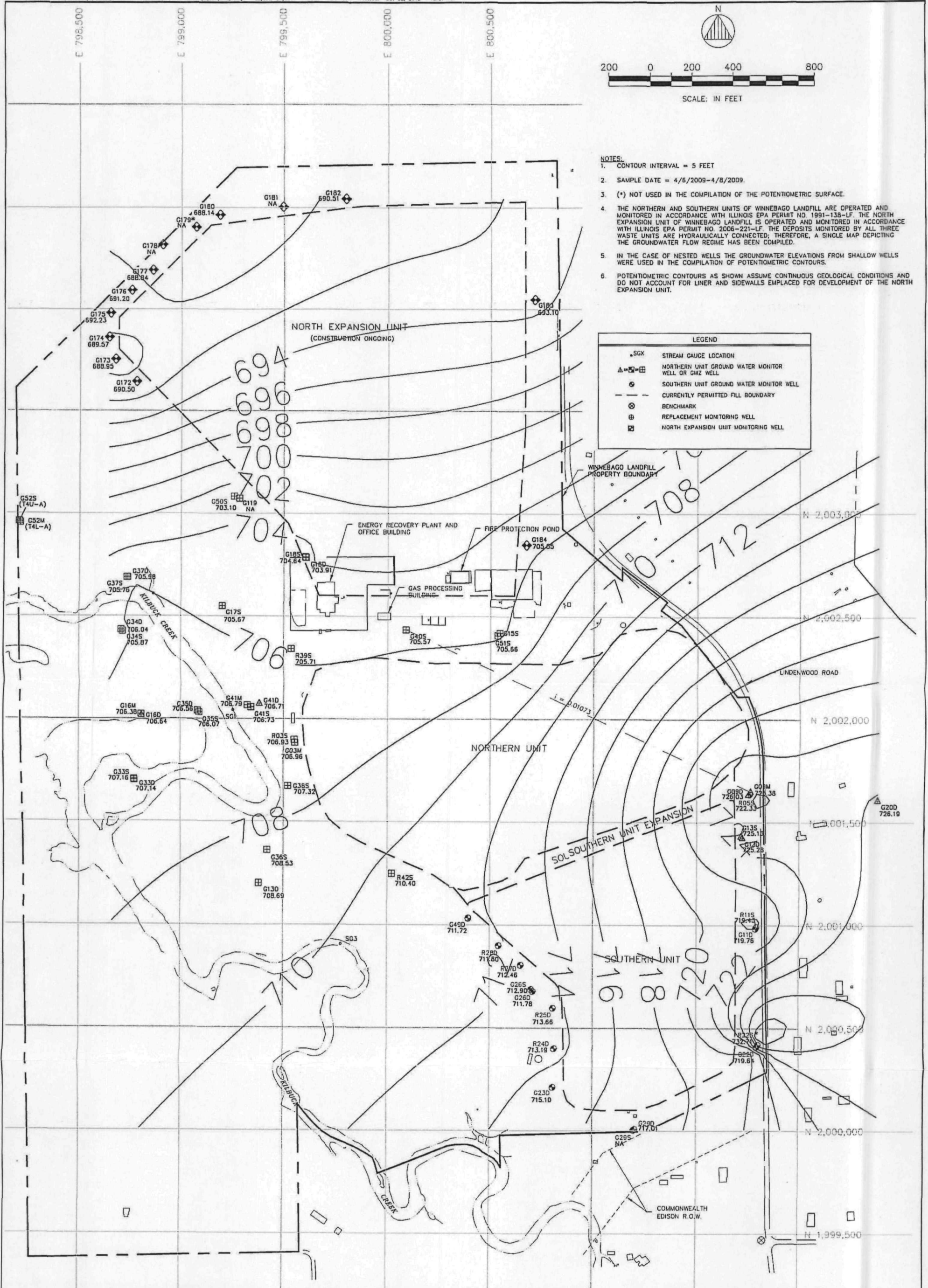
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Peoria, IL 61604-1000, Indianapolis, IN 46204



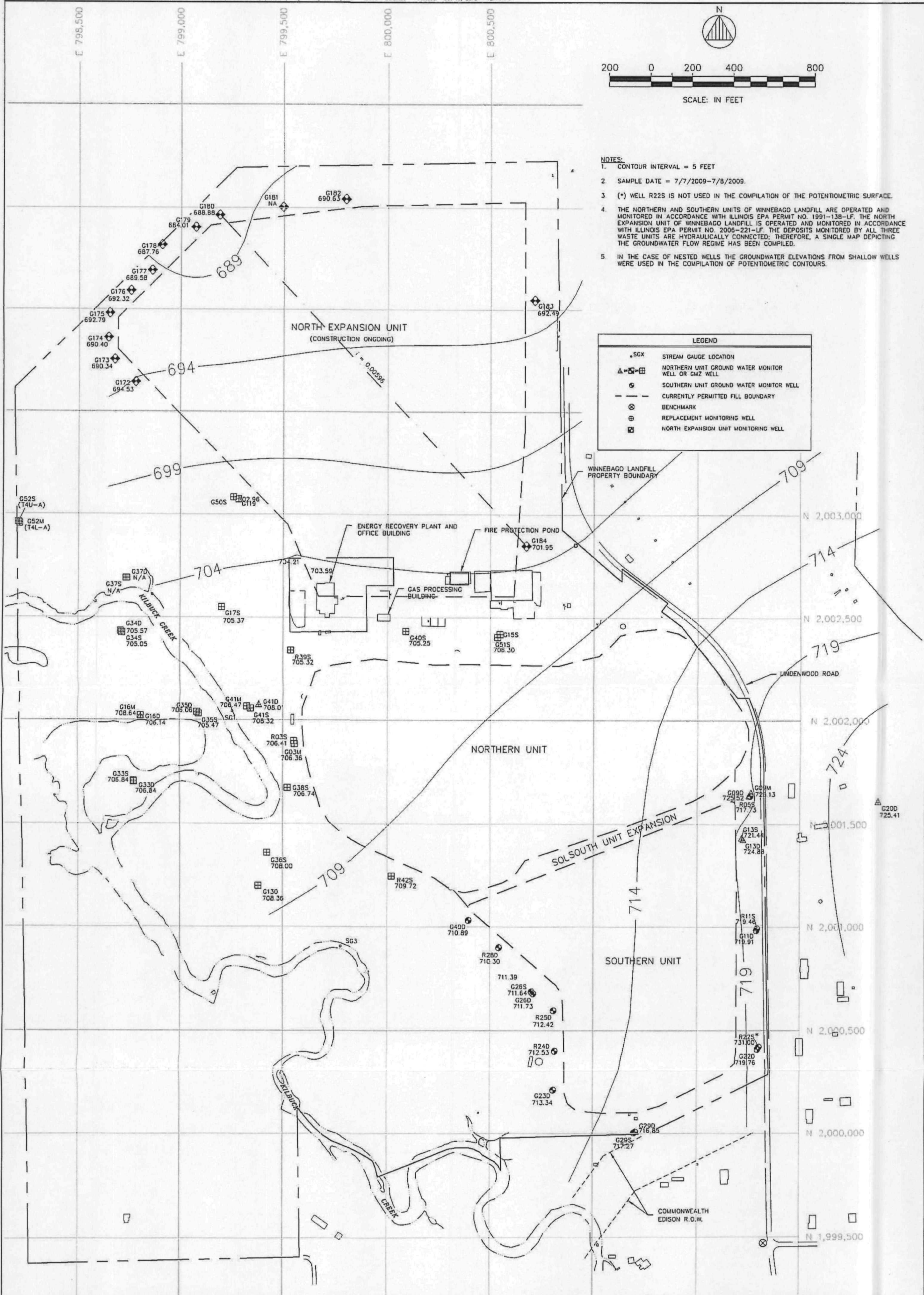


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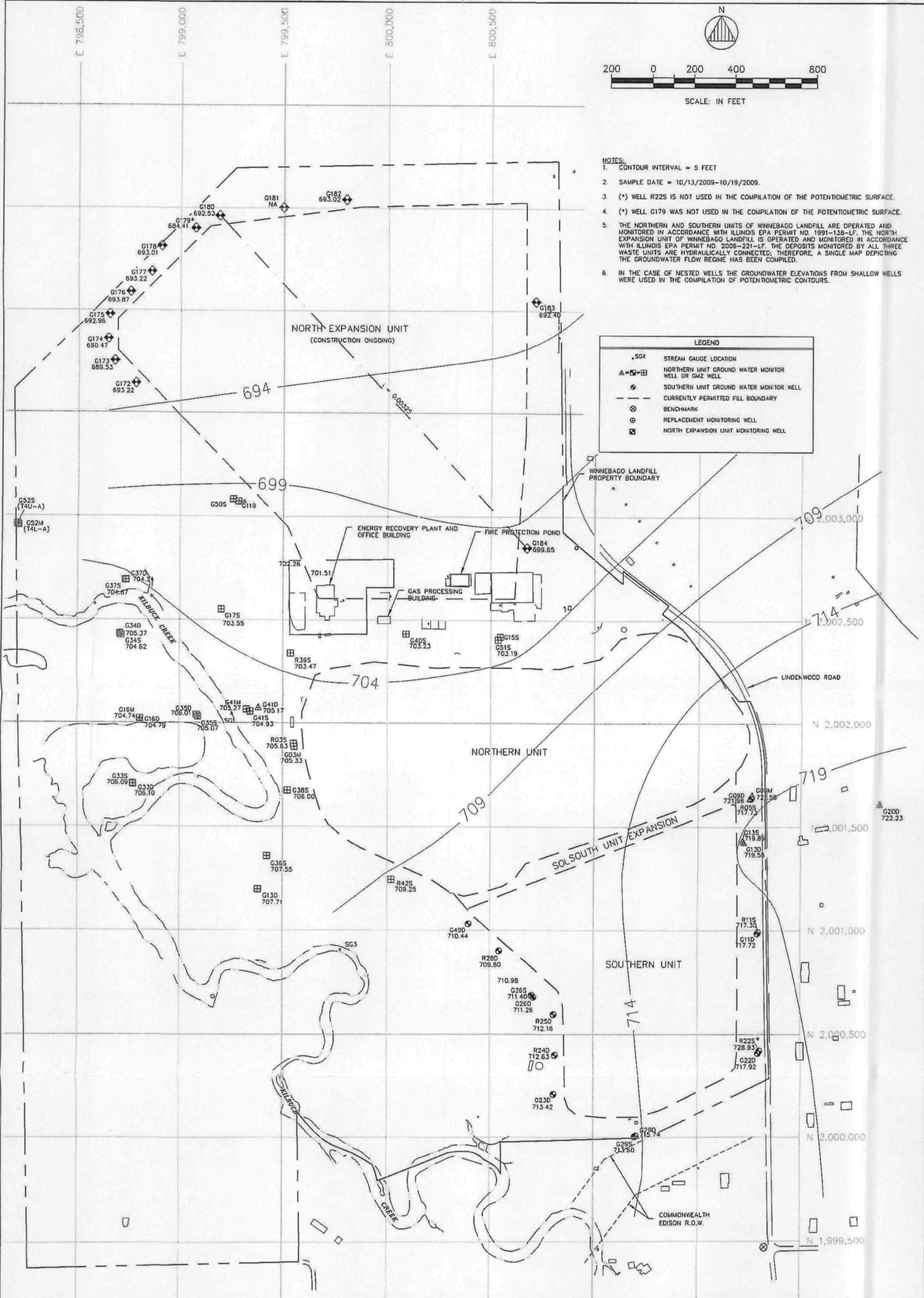


LEGEND	
▲ SGX	STREAM GAUGE LOCATION
△ □ ■	NORTHERN UNIT GROUND WATER MONITOR WELL OR CMZ WELL
⊙	SOUTHERN UNIT GROUND WATER MONITOR WELL
— — —	CURRENTLY PERMITTED FILL BOUNDARY
⊗	BENCHMARK
⊕	REPLACEMENT MONITORING WELL
⊗	NORTH EXPANSION UNIT MONITORING WELL

[illegible]








DATE JUNE 2010 PROJECT ID: 90-114 SHEET NUMBER 3009	POTENTIOMETRIC SURFACE MAP 3RD QUARTER 2009	 <div>ANDREWS ENGINEERING, INC. 3300 Ginger Creek Drive, Springfield, IL 62711-7233 Tel (217) 787-2334 Fax (217) 787-9495 Pontiac, IL • Naperville, IL • Indianapolis, IN • Warrenton, MO</div>	REVISIONS			
	PLANS PREPARED FOR WINNEBAGO LANDFILL ROCKFORD, WINNEBAGO COUNTY, ILLINOIS		NO.	DATE	DESCRIPTION	BY
APPROVED BY: JLR		DESIGNED BY: JLR	DRAWN BY: MPN			

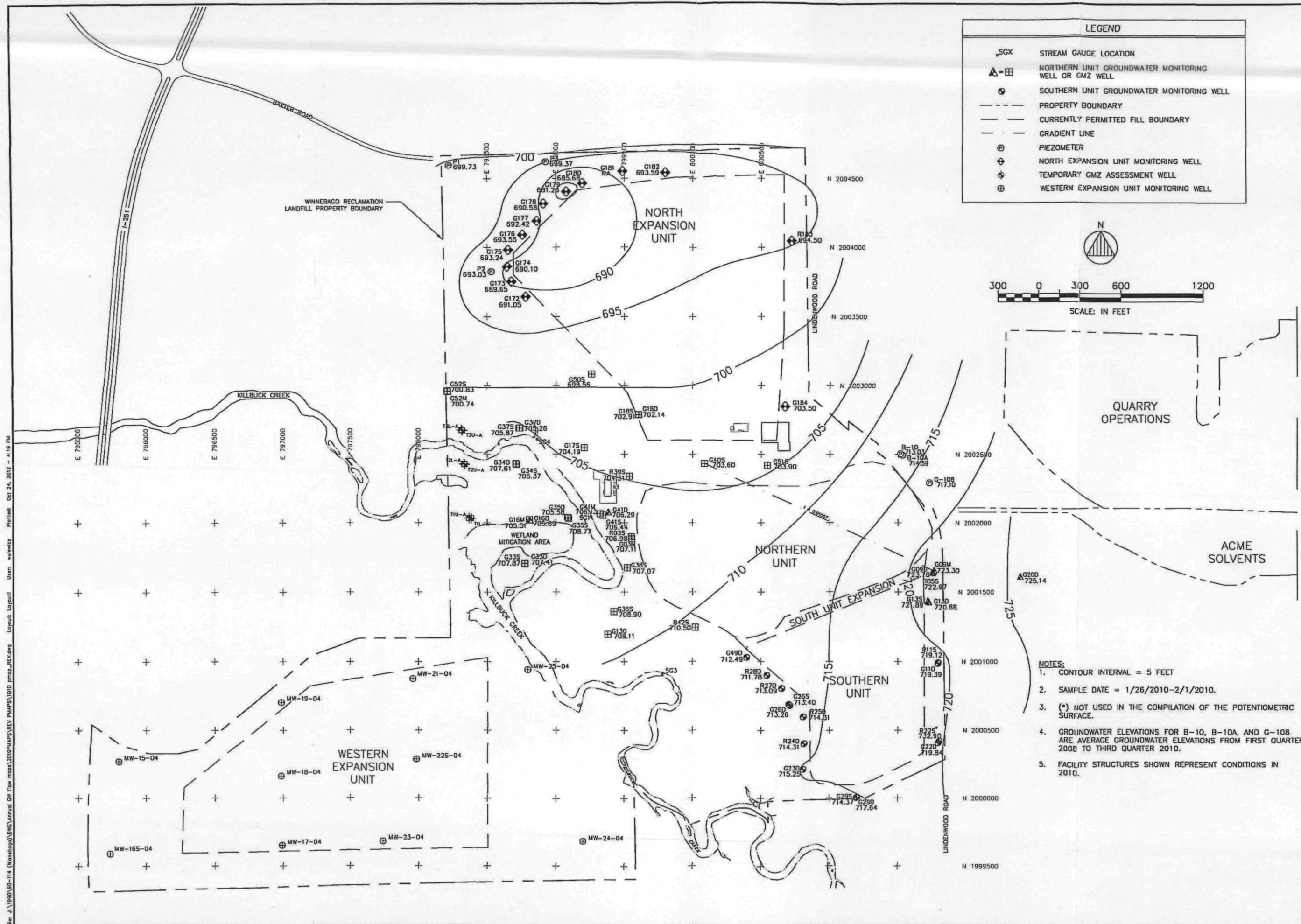


NOTES:

1. CONTOUR INTERVAL = 5 FEET
2. SAMPLE DATE = 10/13/2009-10/19/2009.
3. (*) WELL R225 IS NOT USED IN THE COMPILATION OF THE POTENTIOMETRIC SURFACE.
4. (*) WELL G179 WAS NOT USED IN THE COMPILATION OF THE POTENTIOMETRIC SURFACE.
5. THE NORTHERN AND SOUTHERN UNITS OF WINNEBAGO LANDFILL ARE OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 1991-138-LF. THE NORTH EXPANSION UNIT OF WINNEBAGO LANDFILL IS OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 2006-221-LF. THE DEPOSITS MONITORED BY ALL THREE WASTE UNITS ARE HYDRAULICALLY CONNECTED; THEREFORE, A SINGLE MAP DEPICTING THE GROUNDWATER FLOW REGIME HAS BEEN COMPILED.
6. IN THE CASE OF NESTED WELLS THE GROUNDWATER ELEVATIONS FROM SHALLOW WELLS WERE USED IN THE COMPILATION OF POTENTIOMETRIC CONTOURS.

LEGEND	
SGX	STREAM GAUGE LOCATION
	NORTHERN UNIT GROUND WATER MONITOR WELL OR GMZ WELL
	SOUTHERN UNIT GROUND WATER MONITOR WELL
---	CURRENTLY PERMITTED FILL BOUNDARY
	BENCHMARK
	REPLACEMENT MONITORING WELL
	NORTH EXPANSION UNIT MONITORING WELL

DATE: JUNE 2010	POTENTIOMETRIC SURFACE MAP 4TH QUARTER 2009	 ANDREWS ENGINEERING, INC. 3300 Ginger Creek Drive, Springfield, IL 62711-7233 Tel (217) 787-2334 Fax (217) 787-9495 Pontiac, IL • Naperville, IL • Indianapolis, IN • Warrenton, MO	REVISIONS				
	PROJECT ID: 90-114 SHEET NUMBER: 4Q09		PLANS PREPARED FOR WINNEBAGO LANDFILL ROCKFORD, WINNEBAGO COUNTY, ILLINOIS	APPROVED BY: J.R. DESIGNED BY: J.R. DRAWN BY: MPN	NO	DATE	DESCRIPTION

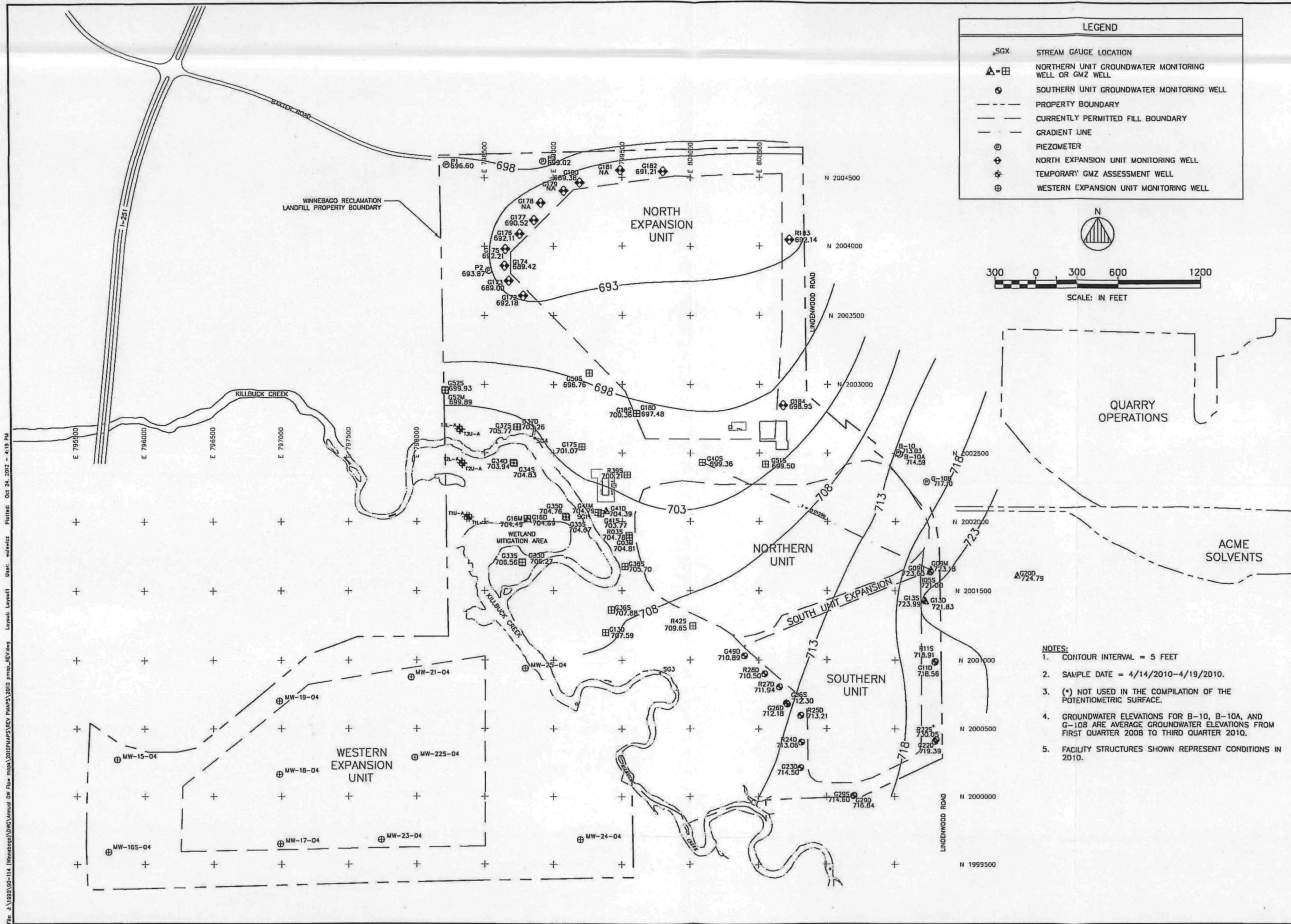
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POTENTIOMETRIC SURFACE MAP
1ST QUARTER 2010

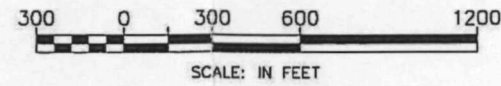
DATE:	JUNE 2010
PROJECT ID:	90-114
SHEET NUMBER:	

01037 Andrews Engineering Inc. Inc.

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LEGEND	
SGX	STREAM GAUGE LOCATION
△-□	NORTHERN UNIT GROUNDWATER MONITORING WELL OR GMZ WELL
●	SOUTHERN UNIT GROUNDWATER MONITORING WELL
---	PROPERTY BOUNDARY
- - -	CURRENTLY PERMITTED FILL BOUNDARY
- - -	GRADIENT LINE
⊕	PIEZOMETER
⊕	NORTH EXPANSION UNIT MONITORING WELL
⊕	TEMPORARY GMZ ASSESSMENT WELL
⊕	WESTERN EXPANSION UNIT MONITORING WELL



- NOTES:
1. CONTOUR INTERVAL = 5 FEET
 2. SAMPLE DATE = 4/14/2010-4/19/2010.
 3. (*) NOT USED IN THE COMPILATION OF THE POTENTIOMETRIC SURFACE.
 4. GROUNDWATER ELEVATIONS FOR B-10, B-10A, AND G-108 ARE AVERAGE GROUNDWATER ELEVATIONS FROM FIRST QUARTER 2008 TO THIRD QUARTER 2010.
 5. FACILITY STRUCTURES SHOWN REPRESENT CONDITIONS IN 2010.

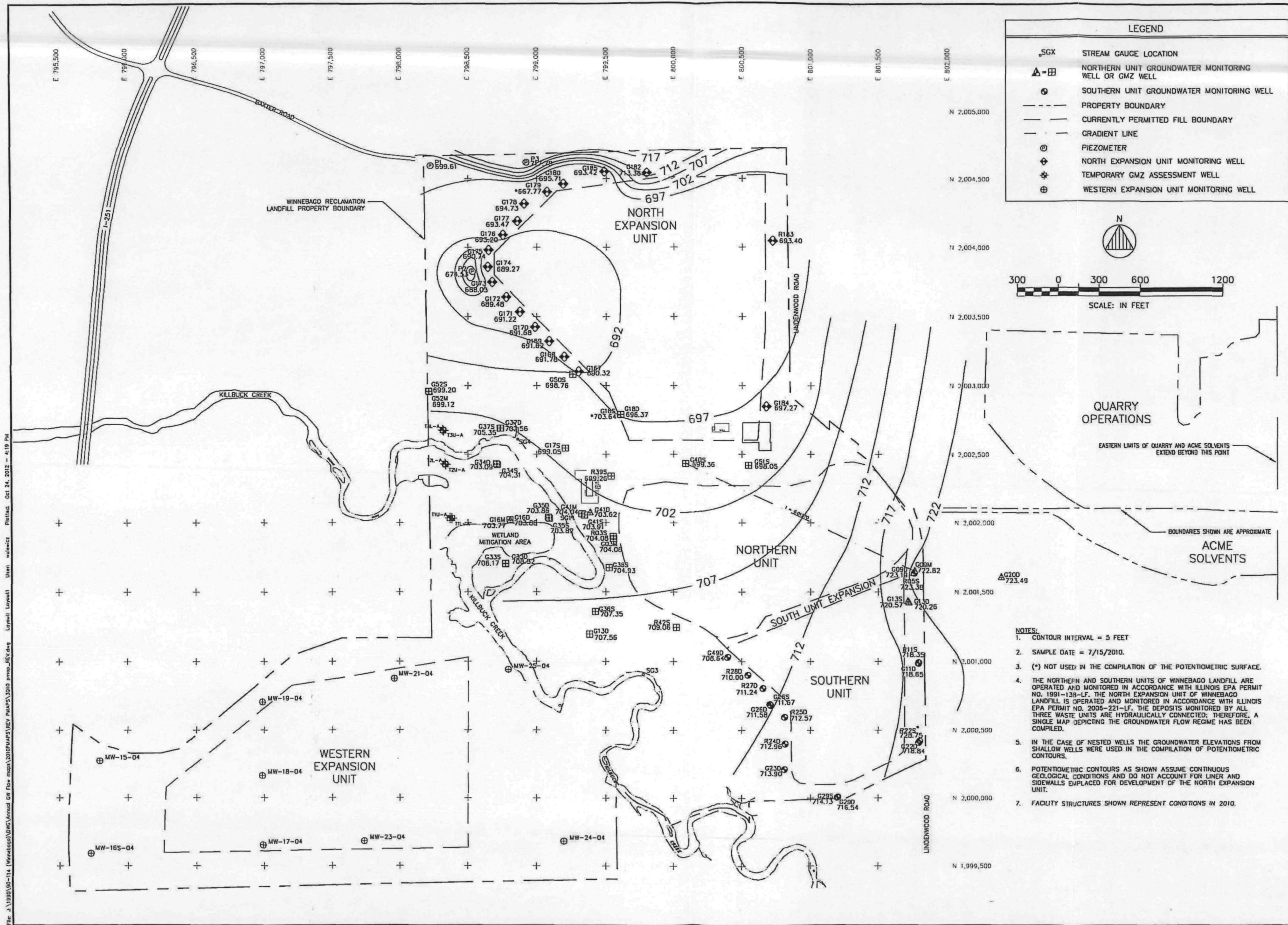
REVISIONS	
NO.	DATE

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APPROVED BY: JLR	DESIGNED BY: JLR
DRAWN BY: MPN	

POTENTIOMETRIC SURFACE MAP 2ND QUARTER 2010	PLANS PREPARED FOR WINNEBAGO LANDFILL ROCKFORD, WINNEBAGO COUNTY, ILLINOIS
DATE: JUNE 2010	
PROJECT ID: 90-114	
SHEET NUMBER:	
2010	

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Fig. J:\1950\10-114 (Winnebago)\DWG\Annual GW Flow maps\2010\MAPS\3Q10 pmw_3Q10.dwg User: jlw Date: 10/14/2010 4:19 PM



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3300 Ginger Creek Drive, Springfield, IL 62711-7233
Tel (217) 787-2334 Fax (217) 787-8495
Peoria, IL • Naperville, IL • Indianapolis, IN • Warren, MO

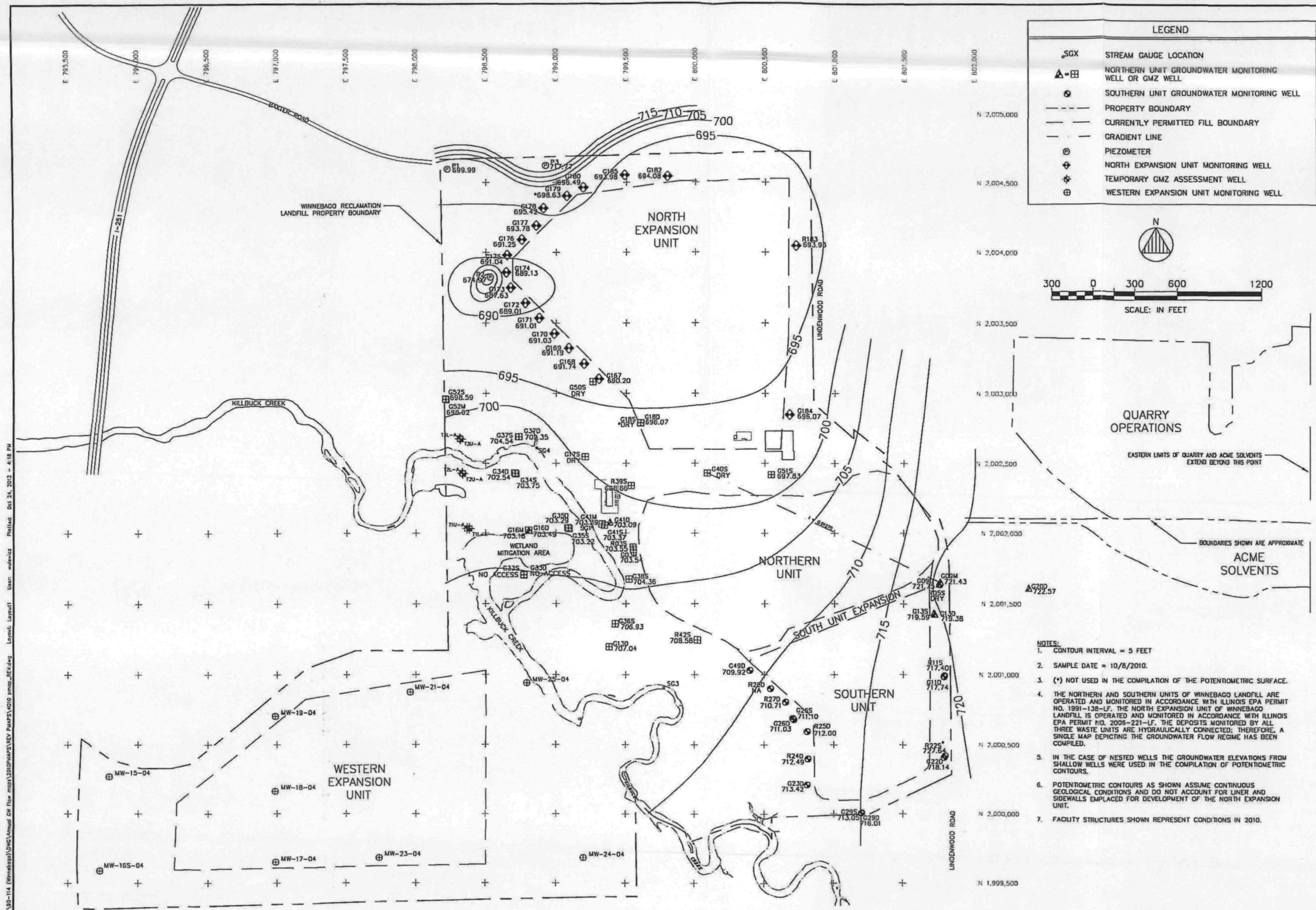
POTENTIOMETRIC SURFACE MAP
3RD QUARTER 2010

PLANS PREPARED FOR
WINNEBAGO LANDFILL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

DATE: SEPTEMBER 2010
PROJECT ID: 90-114
SHEET NUMBER:

3Q10

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LEGEND	
SGX	STREAM GAUGE LOCATION
	NORTHERN UNIT GROUNDWATER MONITORING WELL OR GMZ WELL
	SOUTHERN UNIT GROUNDWATER MONITORING WELL
----	PROPERTY BOUNDARY
— — — —	CURRENTLY PERMITTED FILL BOUNDARY
— — — —	GRADIENT LINE
	PIEZOMETER
	NORTH EXPANSION UNIT MONITORING WELL
	TEMPORARY GMZ ASSESSMENT WELL
	WESTERN EXPANSION UNIT MONITORING WELL

QUARRY OPERATIONS

ACME
SOLVENTS

- NOTES:
1. CONTOUR INTERVAL = 5 FEET
2. SAMPLE DATE = 10/8/2010.
3. (*) NOT USED IN THE COMPILATION OF THE POTENTOMETRIC SURFACE.
4. THE NORTHERN AND SOUTHERN UNITS OF WINNEBAGO LANDFILL ARE OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 1991-138-LF. THE NORTH EXPANSION UNIT OF WINNEBAGO LANDFILL IS OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 2006-221-LF. THE DEPOSITS MONITORED BY ALL THREE WASTE UNITS ARE HYDRAULICALLY CONNECTED; THEREFORE, A SINGLE MAP DEPICTING THE GROUNDWATER FLOW REGIME HAS BEEN COMPILED.
5. IN THE CASE OF NESTED WELLS THE GROUNDWATER ELEVATIONS FROM SHALLOW WELLS WERE USED IN THE COMPILATION OF POTENTOMETRIC CONTOURS.
6. POTENTOMETRIC CONTOURS AS SHOWN ASSUME CONTINUOUS GEOLOGICAL CONDITIONS AND DO NOT ACCOUNT FOR LINER AND SIDEWALLS EMPLACED FOR DEVELOPMENT OF THE NORTH EXPANSION UNIT.
7. FACILITY STRUCTURES SHOWN REPRESENT CONDITIONS IN 2010.

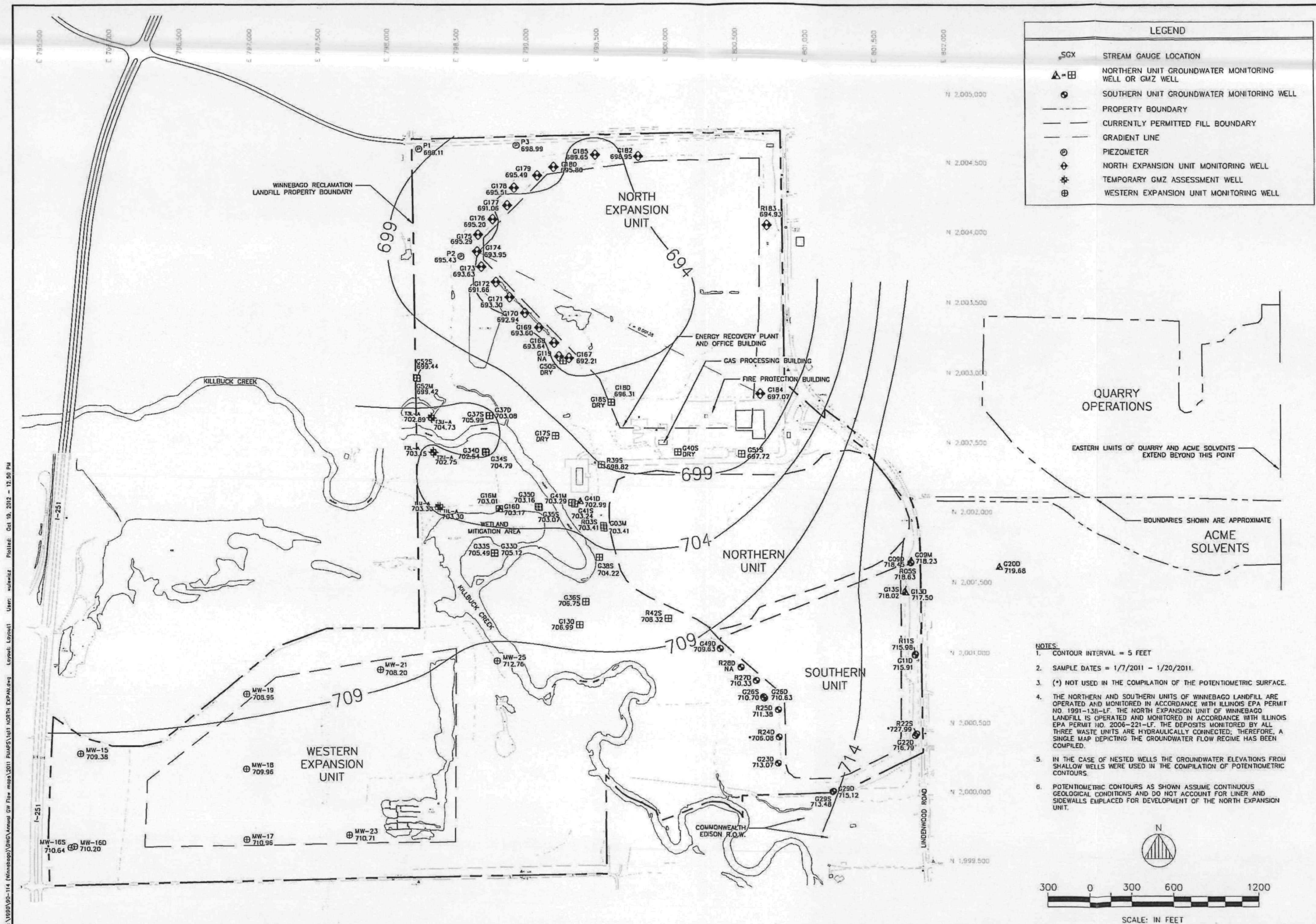
[illegible]

POTENTIOMETRIC SURFACE MAP
4TH QUARTER 2010

PLANS PREPARED FOR
WINNEBAGO LANDFILL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

DATE:	DECEMBER 2010
PROJECT ID:	90-114
SHEET NUMBER:	

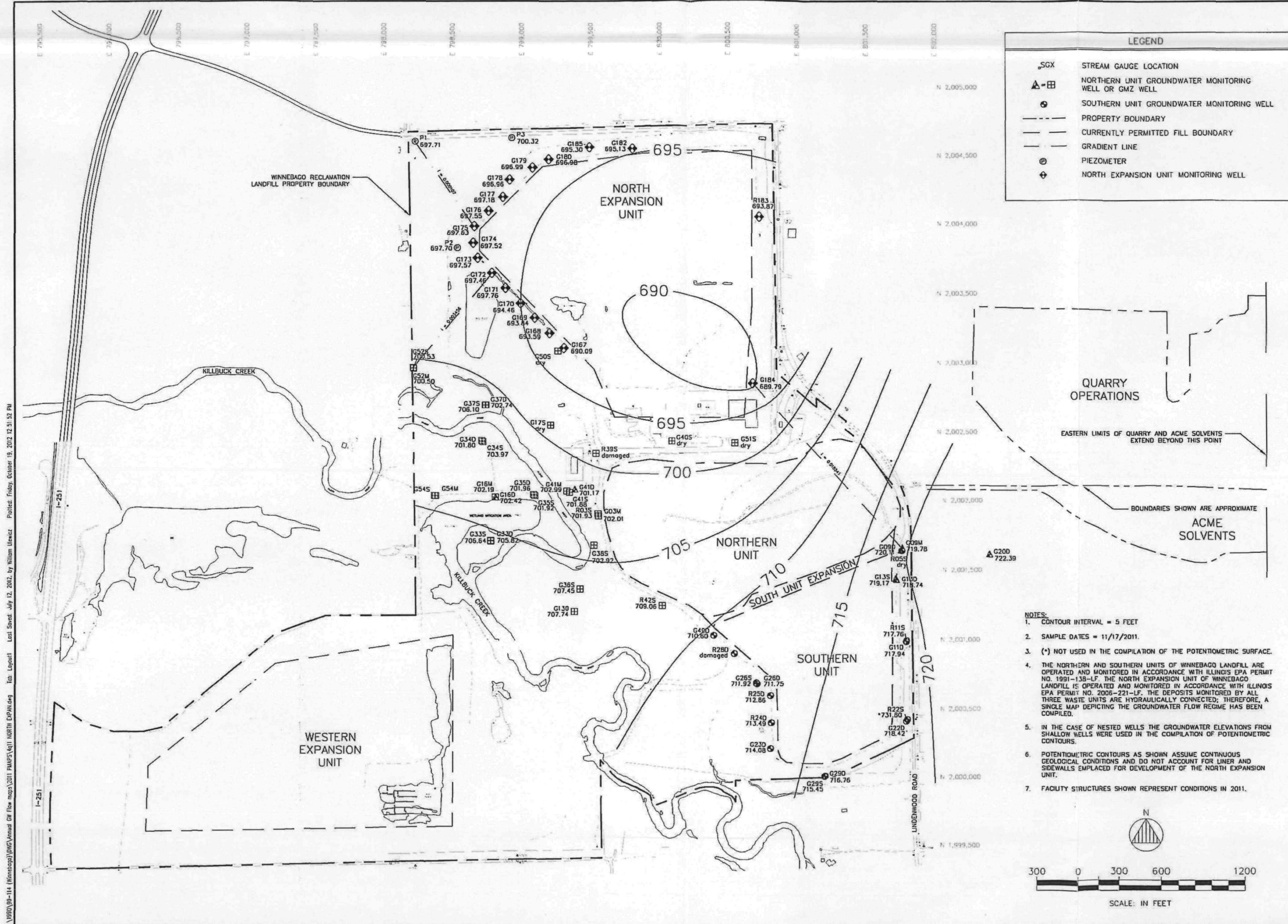
4Q10

[illegible]

POTENTIOMETRIC SURFACE MAP
1ST QUARTER 2011

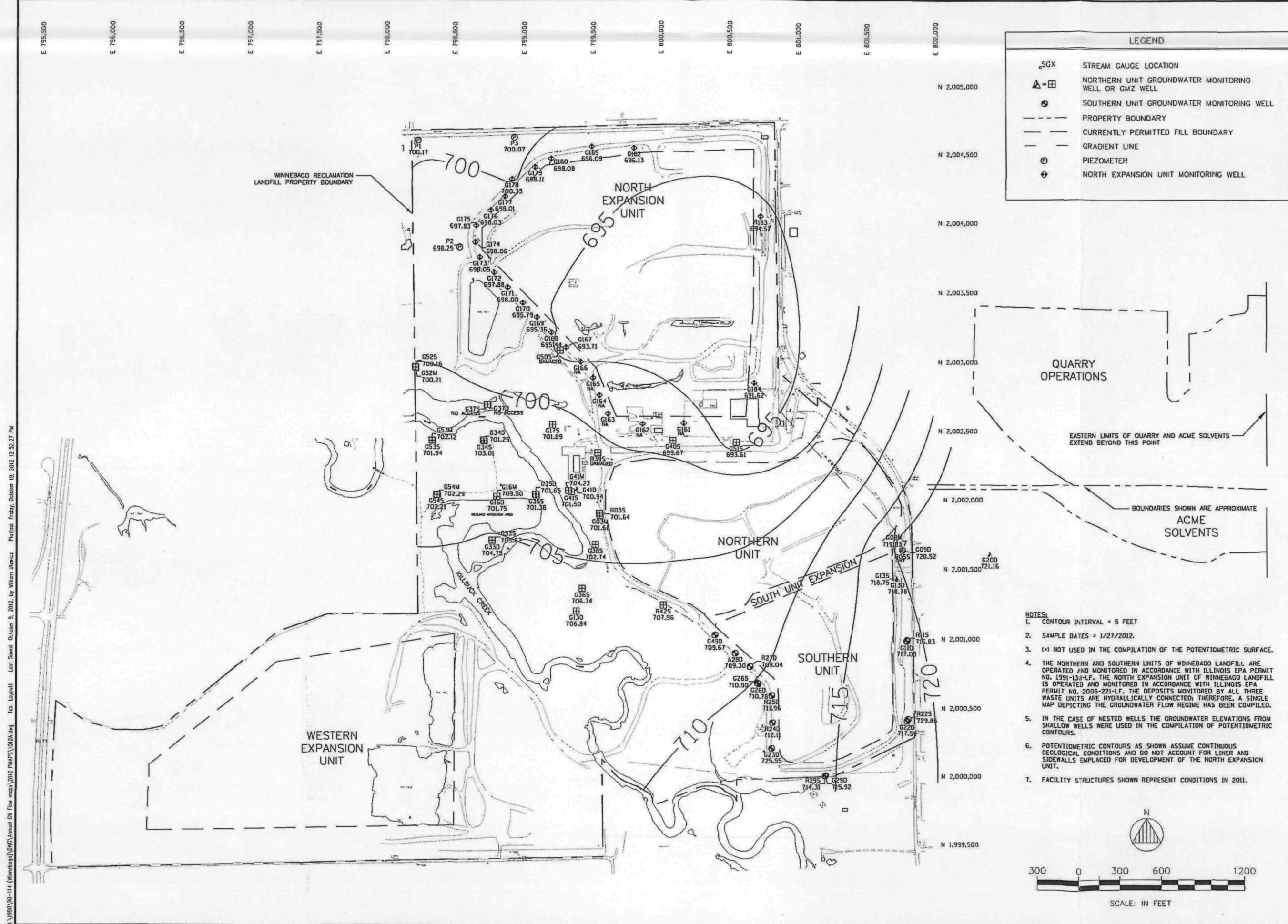
PLANS PREPARED FOR
WINNEBAGO LANDFILL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

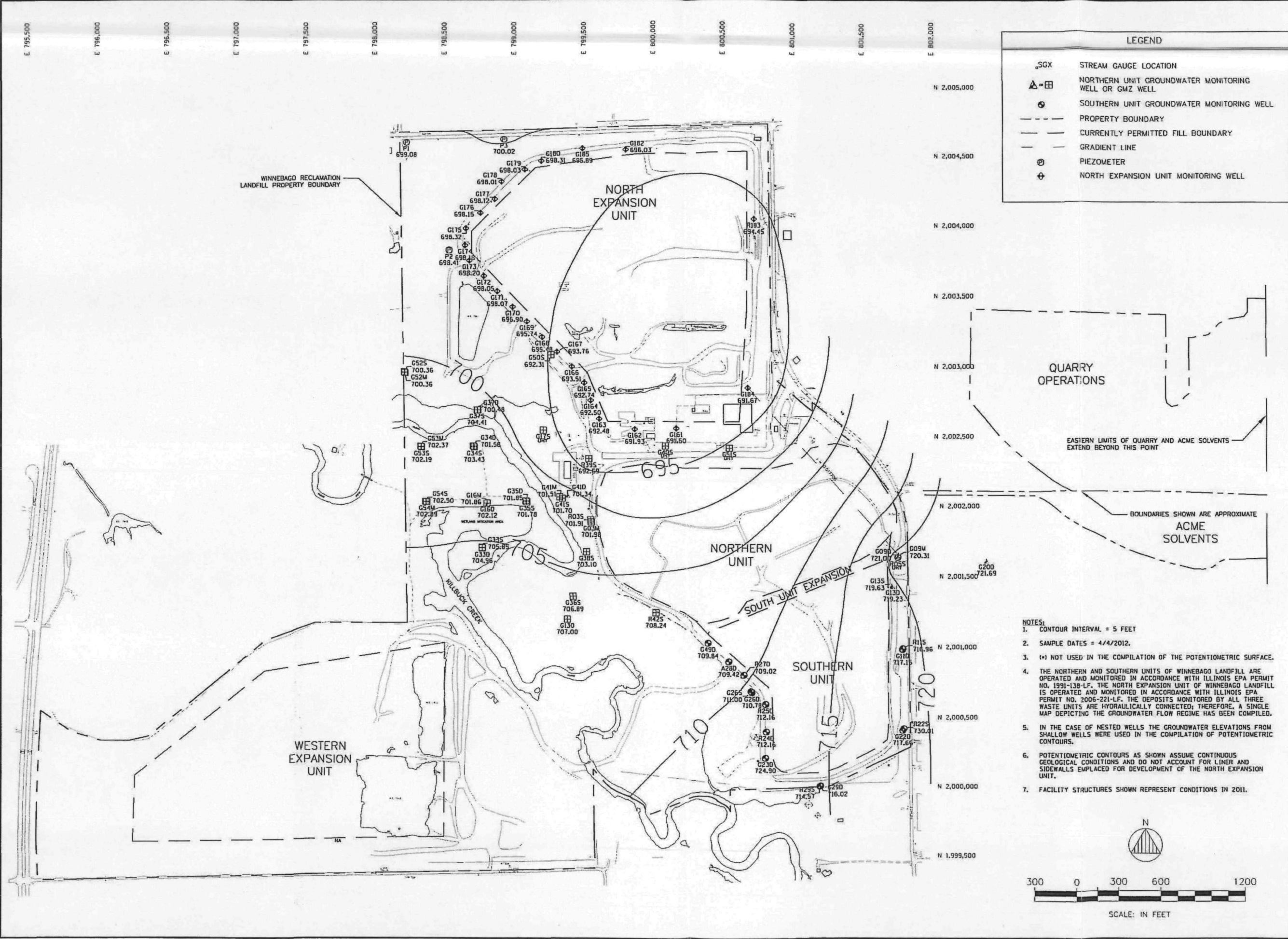
0107 Andrews Engineering, Inc.



- NOTES:
1. CONTOUR INTERVAL = 5 FEET
2. SAMPLE DATES = 11/17/2011.
3. (*) NOT USED IN THE COMPILATION OF THE POTENTIOMETRIC SURFACE.
4. THE NORTHERN AND SOUTHERN UNITS OF WINNEBAGO LANDFILL ARE OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 1991-138-LF. THE NORTH EXPANSION UNIT OF WINNEBAGO LANDFILL IS OPERATED AND MONITORED IN ACCORDANCE WITH ILLINOIS EPA PERMIT NO. 2006-221-LF. THE DEPOSITS MONITORED BY ALL THREE WASTE UNITS ARE HYDRAULICALLY CONNECTED; THEREFORE, A SINGLE MAP DEPICTING THE GROUNDWATER FLOW REGIME HAS BEEN COMPILED.
5. IN THE CASE OF NESTED WELLS THE GROUNDWATER ELEVATIONS FROM SHALLOW WELLS WERE USED IN THE COMPILATION OF POTENTIOMETRIC CONTOURS.
6. POTENTIOMETRIC CONTOURS AS SHOWN ASSUME CONTINUOUS GEOLOGICAL CONDITIONS AND DO NOT ACCOUNT FOR LINER AND SIDEWALLS EMPLACED FOR DEVELOPMENT OF THE NORTH EXPANSION UNIT.
7. FACILITY STRUCTURES SHOWN REPRESENT CONDITIONS IN 2011.

[illegible]





REVISIONS	
NO.	DATE

ANDREWS ENGINEERING, INC.
3300 Ginger Creek Drive, Springfield, IL 62711-7233
Tel (217) 787-2334 Fax (217) 787-9495
Pontiac, IL • Naperville, IL • Indianapolis, IN • Warren, MO
Professional Design Engineering and Land Surveying Firm #184-001941

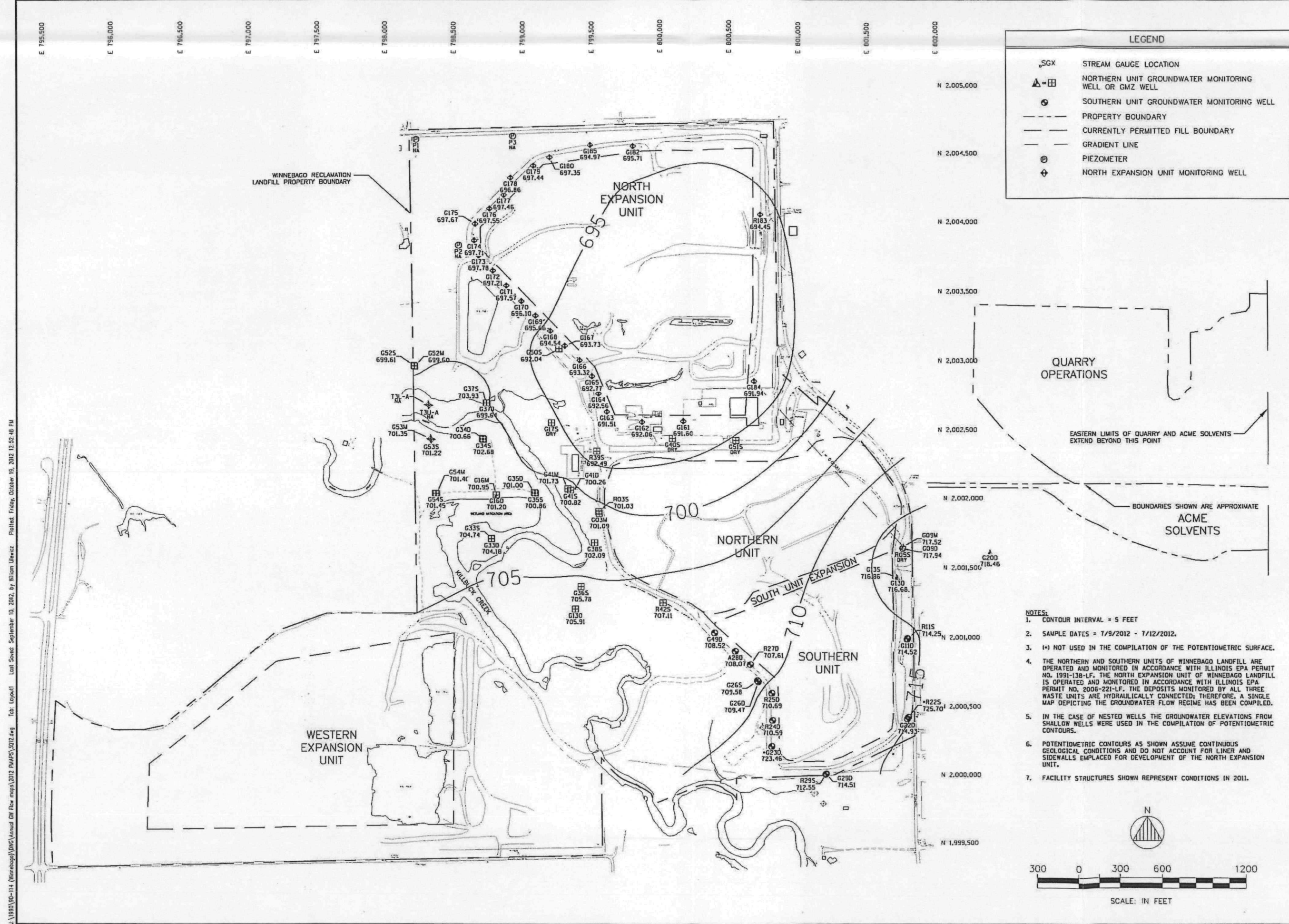
POTENTIOMETRIC SURFACE MAP 2ND QUARTER 2012

PLANS PREPARED FOR
WINNEBAGO LANDFILL

ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

APPROVED BY: JLR DESIGNED BY: JLR DRAWN BY: WCU

DATE: July 2012
PROJECT ID: 90-114
SHEET NUMBER: 2012

[illegible]

ANDREWS
ENGINEERING, INC.

3300 Ginger Creek Drive, Springfield, IL 62711-7233
Tel (217) 787-2334 Fax (217) 787-9495

Pontiac, IL • Naperville, IL • Indianapolis, IL • Warrenton, MO

Professional Design Engineering and Land Surveying Firm #181-001541

REGISTERED PA	REGISTERED PA	REGISTERED PA	REGISTERED PA	REGISTERED PA	REGISTERED PA
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POTENTIOMETRIC SURFACE MAP
3RD QUARTER 2012

PLANS PREPARED FOR

WINNEBAGO LANDFILL

ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

DATE:	September 2012
PROJECT ID:	90-114
SHEET NUMBER:	3Q12

\\rs01\50-114 (Wreathcup)\DWC\Annual CW Flow mps\2012 PHMPs\2012.dwg Tab: Layout1 Last Saved: September 10, 2012, by William Jawicz Plotted: Friday, October 19, 2012 12:52:48 PM

0101 Andrews Engineering, Inc.

Appendix B
Second Quarter 2008
Laboratory Equipment Blank Documentation



PDC Laboratories, Inc.
 P.O. Box 2071 • Peoria, IL 61612-2071
 (309) 692-4882 • (800) 768-8559 • FAX (309) 692-0830



William Charles Waste Companies
 5450 Wansford Way, Suite 201B

Date Received: 14-May-08
 Date Reported: 18-Mar-09

Rockford, IL 61109-1759

Attn: Mr. Evan Buskohl

Sample No: 08052668-5		Collect Date: 14-May-08 7:08			
Client Id: NORTH UNIT		Site: EQUIPMENT BLANK		Locator: WINNEBAGO LF	
	Result	Units	Date / Time		By
EPA 1664 REV 2/99					
Hexane Ext. Material (HEM) by SPE	<	5 mg/l	21-May-08	11:30	HLB
EPA 300.0 R2.1					
Chloride	<	1 mg/l	15-May-08	0:07	Ignay
Chloride, Dissolved	<	1 mg/l	15-May-08	0:52	Ignay
Fluoride	<	0.25 mg/l	15-May-08	0:07	Ignay
Nitrate as N	<	0.02 mg/l	15-May-08	0:07	Ignay
Nitrate as N, Diss.	<	0.02 mg/l	15-May-08	0:52	Ignay
Sulfate, Dissolved	<	1 mg/l	15-May-08	0:52	Ignay
EPA 624					
1,1,1,2-Tetrachloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,1,1-Trichloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,1,2,2-Tetrachloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,1,2-Trichloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,1-Dichloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,1-Dichloroethene	<	1 ug/l	23-May-08	14:14	TTS
1,1-Dichloropropene	<	1 ug/l	23-May-08	14:14	TTS
1,2,3-Trichlorobenzene	<	1 ug/l	23-May-08	14:14	TTS
1,2,3-Trichloropropane	<	1 ug/l	23-May-08	14:14	TTS
1,2,4-Trichlorobenzene	<	1 ug/l	23-May-08	14:14	TTS
1,2,4-Trimethylbenzene	<	5 ug/l	23-May-08	14:14	TTS
1,2-Dibromo-3-chloropropane	<	2 ug/l	23-May-08	14:14	TTS
1,2-Dibromoethane	<	0.5 ug/l	23-May-08	14:14	TTS
1,2-Dichlorobenzene	<	1 ug/l	23-May-08	14:14	TTS
1,2-Dichloroethane	<	1 ug/l	23-May-08	14:14	TTS
1,2-Dichloropropane	<	1 ug/l	23-May-08	14:14	TTS
1,3,5-Trimethylbenzene	<	1 ug/l	23-May-08	14:14	TTS
1,3-Dichlorobenzene	<	1 ug/l	23-May-08	14:14	TTS
1,3-Dichloropropane	<	1 ug/l	23-May-08	14:14	TTS
1,3-Dichloropropene	<	2 ug/l	23-May-08	14:14	TTS
1,4-Dichlorobenzene	<	1 ug/l	23-May-08	14:14	TTS
2,2-Dichloropropane	<	1 ug/l	23-May-08	14:14	TTS
2-Butanone		12 ug/l	23-May-08	14:14	TTS
2-Chlorotoluene	<	1 ug/l	23-May-08	14:14	TTS
2-Hexanone		11 ug/l	23-May-08	14:14	TTS
4-Chlorotoluene	<	1 ug/l	23-May-08	14:14	TTS
4-Methyl-2-pentanone	<	5 ug/l	23-May-08	14:14	TTS
Acetone		83 ug/l	23-May-08	14:14	TTS
Acrylonitrile	<	5 ug/l	23-May-08	14:14	TTS
Benzene	<	1 ug/l	23-May-08	14:14	TTS
Bromobenzene	<	1 ug/l	23-May-08	14:14	TTS



PDC Laboratories, Inc.
(USA) Inc. • Peoria, IL 61612-9671
TEL: 309-698-7500 • FAX: 309-698-7501



William Charles Waste Companies
5450 Wansford Way, Suite 201B

Date Received: 14-May-08
Date Reported: 18-Mar-09

Rockford, IL 61109-1759

Attn: Mr. Evan Buskohl

Sample No: 08052668-5

Collect Date: 14-May-08 7:08

Client Id: NORTH UNIT

Site: EQUIPMENT BLANK

Locator: WINNEBAGO LF

	Result	Units	Date / Time	By
EPA 624				
Bromochloromethane	<	1 ug/l	23-May-08 14:14	TTS
Bromodichloromethane	<	1 ug/l	23-May-08 14:14	TTS
Bromoform	<	1 ug/l	23-May-08 14:14	TTS
Bromomethane	<	2 ug/l	23-May-08 14:14	TTS
Carbon Disulfide	<	1 ug/l	23-May-08 14:14	TTS
Carbon Tetrachloride	<	1 ug/l	23-May-08 14:14	TTS
Chlorobenzene	<	1 ug/l	23-May-08 14:14	TTS
Chloroethane	<	2 ug/l	23-May-08 14:14	TTS
Chloroform	<	1 ug/l	23-May-08 14:14	TTS
Chloromethane	<	2 ug/l	23-May-08 14:14	TTS
cis-1,2-Dichloroethene	<	1 ug/l	23-May-08 14:14	TTS
cis-1,3-Dichloropropene	<	1 ug/l	23-May-08 14:14	TTS
Dibromochloromethane	<	1 ug/l	23-May-08 14:14	TTS
Dibromomethane	<	1 ug/l	23-May-08 14:14	TTS
Dichlorodifluoromethane	<	2 ug/l	23-May-08 14:14	TTS
Ethylbenzene	<	1 ug/l	23-May-08 14:14	TTS
Iodomethane	<	1 ug/l	23-May-08 14:14	TTS
Isopropylbenzene	<	1 ug/l	23-May-08 14:14	TTS
Methylene Chloride	<	5 ug/l	23-May-08 14:14	TTS
n-Butanol	<	1000 ug/l	23-May-08 14:14	TTS
n-Propylbenzene	<	1 ug/l	23-May-08 14:14	TTS
p-Isopropyltoluene	<	1 ug/l	23-May-08 14:14	TTS
sec-Butylbenzene	<	1 ug/l	23-May-08 14:14	TTS
Styrene	<	1 ug/l	23-May-08 14:14	TTS
tert-Butylbenzene	<	1 ug/l	23-May-08 14:14	TTS
Tetrachloroethene	<	1 ug/l	23-May-08 14:14	TTS
Tetrahydrofuran	<	5 ug/l	23-May-08 14:14	TTS
Toluene	<	1 ug/l	23-May-08 14:14	TTS
trans-1,2-Dichloroethene	<	1 ug/l	23-May-08 14:14	TTS
trans-1,3-Dichloropropene	<	1 ug/l	23-May-08 14:14	TTS
trans-1,4-Dichloro-2-Butene	<	1 ug/l	23-May-08 14:14	TTS
Trichloroethene	<	1 ug/l	23-May-08 14:14	TTS
Trichlorofluoromethane	<	1 ug/l	23-May-08 14:14	TTS
Vinyl Acetate	<	5 ug/l	23-May-08 14:14	TTS
Vinyl Chloride	<	2 ug/l	23-May-08 14:14	TTS
Xylenes (Total)	<	2 ug/l	23-May-08 14:14	TTS
EPA 625				
Hexachlorobutadiene	<	2 ug/l	21-May-08 3:56	PSB
Naphthalene	<	10 ug/l	21-May-08 3:56	PSB



PDC Laboratories, Inc.

PO Box 9671 • Peoria, IL 61612-0671
815-692-9122 • FAX 815-692-9123 • TOLL FREE 800-368-2822



William Charles Waste Companies
5450 Wansford Way, Suite 201B

Date Received: 14-May-08

Date Reported: 18-Mar-09

Rockford, IL 61109-1759

Attn: Mr. Evan Buskohl

Sample No: 08052668-5		Collect Date: 14-May-08 7:08			
Client Id: NORTH UNIT		Site: EQUIPMENT BLANK		Locator: WINNEBAGO.LF	
	Result	Units	Date / Time		By
SM (18) 2540C					
Solids, Total, Dissolved, Filtered	<	17 mg/l	15-May-08	14:46	MBB
SM (18) 4500 NH3 B,H					
Nitrogen, Ammonia as N	<	0.09 mg/l	21-May-08	14:30	TIN
Nitrogen, Ammonia as N, Diss.	<	0.09 mg/l	21-May-08	14:29	TIN
SM (18) 5530B,D					
Phenolics	<	0.005 mg/l	21-May-08	12:08	Igarg
SM 4500 CN C/SW9012A					
Cyanide, Total	R<	0.005 mg/l	20-May-08	10:24	Igarg
SW-846 3015					
Sample Preparation			16-May-08	10:15	BAB
SW-846 6020					
Arsenic	<	1 ug/l	27-May-08	17:46	JMW
Arsenic, Dissolved	<	1 ug/l	28-May-08	14:49	JMW
Barium	<	1 ug/l	27-May-08	17:46	JMW
Boron		28 ug/l	28-May-08	9:09	JMW
Boron, Dissolved	<	10 ug/l	29-May-08	6:46	JMW
Cadmium, Dissolved	<	1 ug/l	28-May-08	14:49	JMW
Chromium, Dissolved	<	4 ug/l	07-Jul-08	13:35	JMW
Lead, Dissolved	<	1 ug/l	28-May-08	14:49	JMW
Magnesium, Dissolved	<	0.1 mg/l	07-Jul-08	13:35	JMW
Mercury, Dissolved	H<	0.2 ug/l	08-Jul-08	9:19	JMW
Potassium	<	0.1 mg/l	27-May-08	17:46	JMW
Sodium	<	0.1 mg/l	27-May-08	17:46	JMW
Zinc, Dissolved	<	6 ug/l	28-May-08	14:49	JMW

H - Method Hold Time Exceeded

PDC Laboratories participates in the following laboratory accreditation/certification and proficiency programs. Endorsement by the Federal or State Government or their agencies is not implied.

NELAP Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17533

Drinking Water Certifications: Indiana (C-IL-04); Kansas (E-10338); Kentucky (90058); Missouri (00870); Wisconsin (998294430)

Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (99829443)

Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998294430)

UST Certification: Iowa (240)

Certified by: Gail Schindler
Gail Schindler, Project Manager

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